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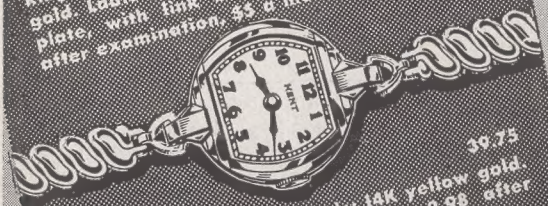

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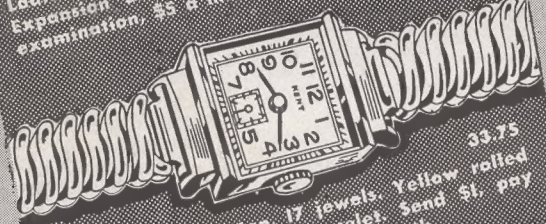

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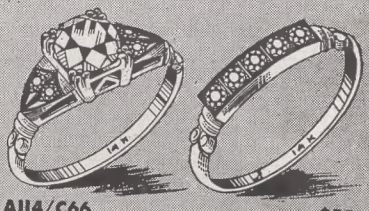

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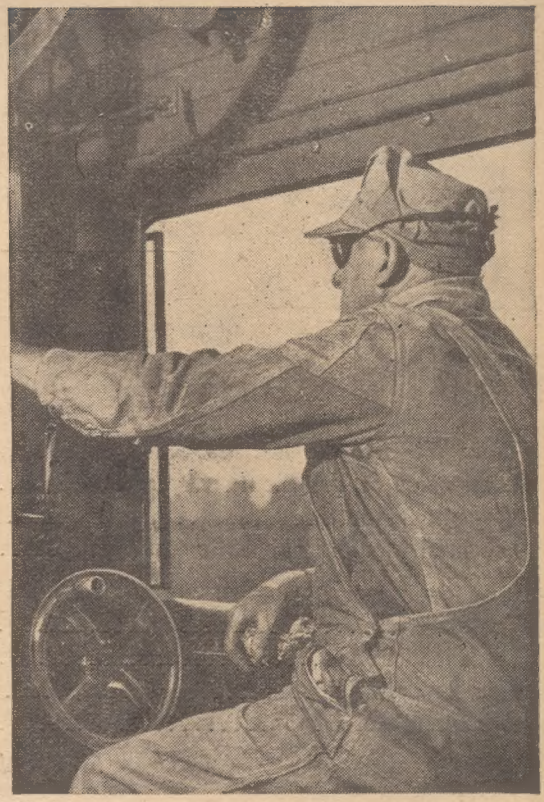
(A REPORT TO THE PEOPLE FOR 1946)



You, and all Americans, look to the railroads not only to take you places, but also to bring you things—food, clothing, fuel, and just about everything else for your home and your business. For this dependable service to 140 million people, and for hauling the heaviest peacetime traffic on record, the railroads received about 8 billion dollars in 1946. Let's see what became of this money.

FOR EMPLOYEES . . . 51.5¢

More than half of every dollar went to railroad employees in wages and salaries.

33¢ FOR MATERIALS

Much of this 33¢ spent for materials, fuel, and other supplies was, in turn, spent by the railroad suppliers to pay *their* employees. So, directly or indirectly, by far the largest part of the railroad dollar goes to pay wages.

6.2¢ FOR TAXES

This part of the railroad dollar went to Federal, state, and local governments to be used—the same as your own taxes—to help maintain schools, courts, roads, police and fire protection, and for various other public services and institutions. None of this tax money is spent on railroad tracks or terminals.

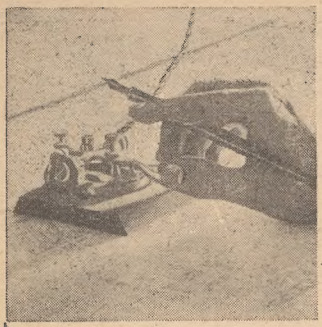
6.6¢ FOR INSURANCE POLICYHOLDERS, INVESTORS IN BONDS, AND FOR RENTS

Most of this 6.6¢ was paid to those who lend money to the railroads—including millions of thrifty Americans who invest indirectly in railroads through their insurance policies and savings accounts. The average rate of interest which railroads pay on their bonds and other obligations is less than 4 per cent.

2.7¢ FOR IMPROVEMENTS & OWNERS

And so after paying for wages, materials, taxes and necessary charges upon their obligations, railroads in 1946 had only 2.7¢ left out of each dollar they took in. Out of this 2.7¢ they must pay for the improvements necessary to keep railroad property abreast of public needs, before anything becomes available for dividends to their owners.

ASSOCIATION OF **AMERICAN RAILROADS** WASHINGTON 6, D.C.



RAILROAD MAGAZINE

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by Frederick Blakeslee

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Alin Overcame More Than One Handicap When . . .

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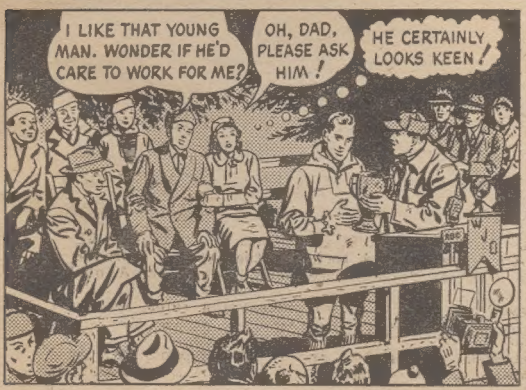
SAY, THIS BLADE'S A WONDER! I NEVER KNEW SHAVING COULD BE SO QUICK AND EASY!
THAT'S A THIN GILLETTE AND IT'S SEEN PLENTY OF USE, TOO



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Rail Dog

By GEORGE CLAPP

NIGHT had fallen, and a cold drizzly rain had set in. From time to time a gust of wind from off the Hudson River lashed the New York Central depot, driving the drops of rain against the windows with a noise that made the stationmaster wonder if there wasn't a little ice falling, too.

Close by in the Albany Post Office, the railway mail clerk had called at the registry room to sign for the eastbound registers. "Looks like a rocky night," mused the clerk in the cage as he passed the registers through the window.

"Yeah, but as long as the roof don't leak we'll be all right," was the road clerk's reply.

Watching the valuable mail as it was trucked to the train-shed, the clerk did not notice a dog that had detached himself from the shadows and followed close at his heels. Not until the Express had rolled in and the registers were safely loaded aboard, did the clerk glance around. The dog with a wistful look was wagging his tail.

"Hello, pup."

The dog was shaking all over now and wagging his tail as fast as he could.

"Want to go along?"

The dog seemed to sense the clerk's friendliness and in every way tried to make him understand that he needed a home and someone to look after him.

"All right, come on then," and as the clerk climbed onto the mail truck and into the mail car, the dog followed.

Right then and there began a dog career that has few equals.

Inside the car was warmth, and Owney, as the dog was later called, soon selected a pile of mail sacks near the radiator, and curled up until several of the clerks took out their lunch boxes. Then sitting in their midst he expertly caught an occasional morsel as it was thrown his way.

At New York, Owney followed the clerk over to the Westbound Express and entered the mail car as nonchalantly as though he actually belonged there. Evidently the wheels clicking over the rails had done something to the dog, for when the clerk left the train, Owney stayed aboard, and went through to Chicago. After touring the Middle West he headed for Mexico, always riding the mail car. After a lapse of considerable time he showed up in the States with a peso tied about his neck. After touring the States some more he appeared in a city on the Pacific Coast, where he was immediately adopted by the clerks in the Seapost. By this time he had collected several tokens and coins.

His next adventure was a trip around the world. Back in the States again, it was found that he had collected so many medals that a coat would be necessary to carry them all. So the clerks fitted a jacket on Owney to which were attached the coins and medals.

He continued to travel around the country for some time after that, but every dog has his day, even Owney. He was sleeping in the postoffice of an Ohio city, waiting for a clerk to take him somewhere, when he was observed by the postmaster. The postmaster, not knowing of the dog's fame, called the proper authorities and had him disposed of.

But that was not the end of Owney. The clerks had the body mounted, and he is now in a museum in Washington, resplendent in his coat with medals attached.

You who are reading this story are probably wondering what kind of a dog Owney was. To this question I can return no exact answer. I have studied his picture, and if I had to hazard a guess, I would say that Owney was mostly wire-haired terrier. But that's only a guess, and a long one at that.

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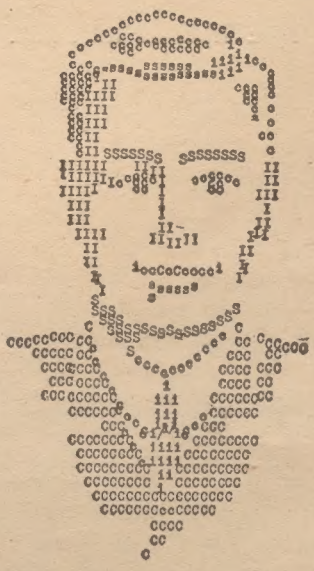
Graduates include the presidents, board chairmen, chief engineers or chief chemists of some of the largest steel, airplane, chemical, railroad and electrical equipment companies in the country. Thousands of others have registered substantial successes in their chosen fields. Here's the kind of coupon they signed and mailed.

are you the I. C. S. type of man?



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Train Wires to the Horizon

By ETHNE M. KENNEDY

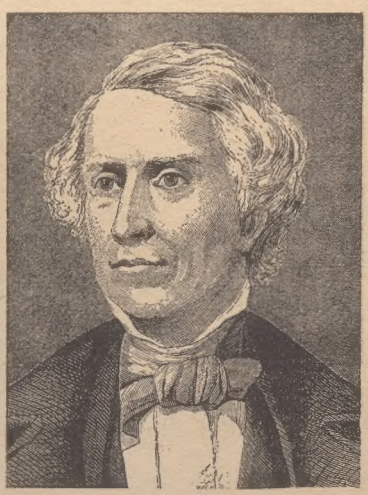
WRAPPED 'round the equator, rail telegraph and telephone wires would circle the earth fifty-one times—1,285,898 miles of copper thread, vibrant with terse train talk

NINE MONTHS AGO, a Baltimore & Ohio train speeding southward from Baltimore to Washington at a sixty-mile clip picked up a message that no job-wary dispatcher would ever initial. Dated June 4th, 1946, it read: *What Hath God Wrought,* scrolled and signed in the round hand of Margaret Truman, daughter of President Harry Truman. How, where and why that facsimile train order was sent is a story as new as tomorrow's radio beam telegraphy, as old as Morse. And it's but one link in the tieup that has been making history for more than a century: the parallel strides of railroads and the telegraph into nearly one hundred thousand towns north, south, east and west across America.

Outside government officials and personnel of the two industries concerned, few people knew of the experiment. The test was part of a long-range project mapped out by Western Union and Radio Corporation of America, for the extension of radio relay transmission to all key cities in the United States by 1949, and for research on its application to

allied fields. This will mean telegrams sent aerially by radio beam; perhaps eventually, the elimination of all telegraph poles for a network of transmission and reception radio stations. But without looking into the future, the trial run proved beyond doubt the practicality of sending written orders to a train moving within contact area of radio hookup.

While the public may remain unaware of the revolution in methods of mass communications until pole lines and wires come tumbling down, railroads appear determined to keep pace with progress. Pioneered by the B&O, radio facsimile telegraphy may in the next ten years become a rail standby in the "bright new world" postered by war and postwar advertising, if costs do not prove prohibitive. At present, train operations on 145,647 miles of road—over sixty-eight percent of the total railway mileage in the United States—are being directed by telephone, and the figure is steadily mounting. The telegraph still holds down 71,572 miles of dispatching territory, while tele-printers are carrying the bulk of company business and inter-office communications. But if the newcomer lives up to present tests and predictions, the capacity of communication lanes can be stepped up to one thousand messages a minute projected in opposite directions simultaneously. Add to this its greater dependability during storm periods, and it would seem that radio beam telegraphy leaves nothing wanting as a communication system capable of expanding along with any transportation industry.



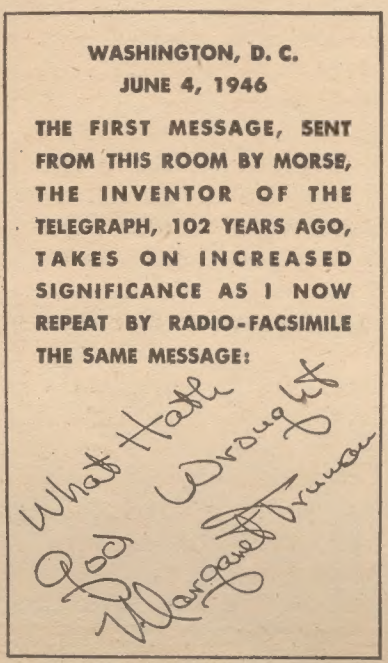
INVENTOR Samuel F. B. Morse

The significance of the message sent from the Capitol on June 4th, however, went far deeper than a publicity toot for the wonders of the future. It was humble recognition of past greatness. One hundred and two years before, the same message was put on telegraph wires for the first time, when Samuel F. B. Morse stood in the same Capitol room and tapped out those four words—W h a t H a t h God Wrought—on a heavy, awkward key. It was a moment to be celebrated often in the years t h a t followed but then its triumph went unnoticed, except for a small number of visionaries. A m o n g these were John H. Latrobe and Louis McLane of the B&O, who in their own way made the completion of the first telegraph line possible.

Samuel Morse was not the first, nor the only man, to attempt to link distant points by electricity. Harrison Dyar, Joseph Henry and Royal E. House were but a few of the scientists who struggled with the problem in this country. All met up with ridicule from the newspapers and cracker-barrel wits; but their greatest hazard was lack of money to establish their claims. And Morse was no exception, though he was first to get a line in operation. In spite of the mechanical assistance of his friends and a moderate amount of financial backing, this American artist spent almost ten years torn

between the vision of a world made one by his singing wires, and despair that he might die of starvation in the interim.

When on March 3rd, 1843, Congress awarded thirty thousand dollars to the construction of an experimental line, the telegraph got its start. Still Morse and his associates realized that this sum would barely cover the expense of essential materials, equipment and wages, leaving nothing for the purchase of land. If the Baltimore & Ohio—the only railroad then entering the Capitol—would allow wires to be strung along its right-of-way, they might get by without additional funds. That *if* became a fact through the intervention of John H. Latrobe, B&O counsel, and Louis McLane, head of the management, when in 1843 the B&O board of directors passed a resolution granting this right.


WASHINGTON, D. C.
JUNE 4, 1946
THE FIRST MESSAGE, SENT FROM THIS ROOM BY MORSE, THE INVENTOR OF THE TELEGRAPH, 102 YEARS AGO, TAKES ON INCREASED SIGNIFICANCE AS I NOW REPEAT BY RADIO-FACSIMILE THE SAME MESSAGE:
What Hath God Wrought
Margaret Truman

CLOSEUP of first radio-rail facsimile message

Though eight years passed before the railroads began utilizing the telegraph for train operation, the pattern of pole lines paralleling the tracks marked a tieup between the two—a combination that meant millions in profit for one, millions in the safety of lives and equipment for the other. Railroad agents in whistle stops from Maine to Idaho became contact men for the telegraph companies. In large cities, the telegraph system grew and was perfected; in small road offices, its instruments were hardly changed. Together they expanded, telegraphy making possible the thousands of miles of single track slung across the continent by insuring their safety.

It was inevitable that the two industries should clash at least once during their relationship. This happened in the 1880's, when Jay Gould succeeded in clipping Western Union for millions to add to his railroad hoard.

CODE SIGNALS — telegraph — have been attempted through all centuries by all peoples. Indians transmitted messages to distant parts by smoke or the beating of drums on the hillside. Civilized Europe used various systems of shapes or signs projected from heights to represent the letters of the alphabet; at night, torches. Relay stations were located at fixed distances so that forms were easily visible with a moderately powerful telescope. The plan, however, was basically complicated by the number of shapes necessary.

Lord George Murray refined the process somewhat in 1795 by his machine composed of six shutters painted black, each subject to being opened at pleasure. Different letters and figures were indicated by the situation of the open shutter. By 1816, England had advanced as far as a wooden semaphore, consisting of an up-

right pole to which were attached two movable arms. This simple mechanism could be seen with the naked eye from as great a distance as the shutter telegraph with the aid of a telescope. It proved capable of forty-eight distinct signals: the alphabet plus thirteen arbitrary signs.

Yet while this was an improvement, the development of Stephenson's steam engine and the rapid stretching of rails across England demanded a surer, speedier method. Britain's fog blanked out messages from time to time; and though England might wait for news from abroad, safety couldn't. Single-track railroads were handicapped by their inability to send out alarms should an obstruction be placed on the tracks or an engine run wild. Product of this necessity was the adoption of Cooke & Wheatstone's dial telegraph, the first practical use of electricity for train dispatching.

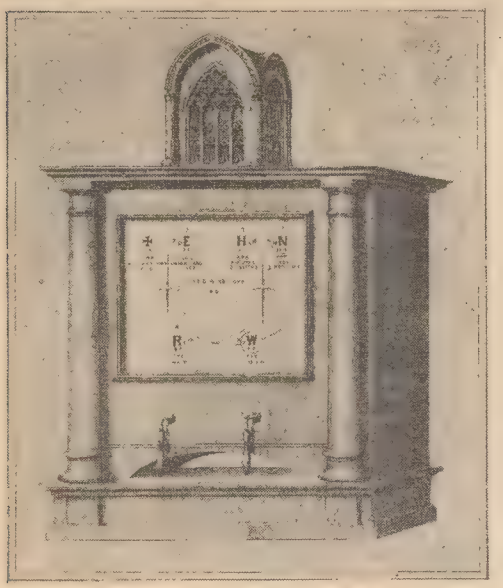
The 1837 model of Cooke & Wheatstone's invention was based on the principle that a magnetic needle placed in the center of a coiled wire could be moved in controlled directions by making or breaking contact with a single voltaic battery. During its development, various numbers of needles were tried, before being reduced to two. The direction of the needles indicated a letter or word on the face of a dial, some letters requiring as many as three complete movements of a single needle or the action of the two simultaneously. Transmission was slowed by the fact that the correspondent had to register his understanding of each word individually.

Courtesy of Telegraph and Telephone Age

HISTORY REPEATED. Industrial and rail experts view facsimile recording ***(opposite)*** aboard a fast moving B&O train, Washington-bound along route of Morse's original line

All stations on the line could read the message, since they were part of the same circuit. Before the dispatcher began his order, he summoned the station clerk by ringing a bell. Unfortunately, bells were rung in unison in all stations, so the operator was further indicated by a station letter. In some cases, the Norfolk Railway for instance, this nuisance was avoided by stringing separate wires.

The first prominent telegraph, built alongside England's Great Western Railway, was completed in July, 1839, at a cost of between 250 and 300 pounds (approximately $1,000 to $1,200) per mile. Though this figure was high—in America, telegraph lines averaged about $150 per mile—economy was the primary reason for its construction. Besides enabling a single-track road to carry the traffic of double-track railways, the telegraph safeguarded property efficiently and was cheaper to maintain than the older system.



MAGNETIC needle telegraph designed for England's Great Western Railway by Cooke & Wheatstone transmitted about 30 letters a minute

Cooke first adopted a plan for laying wires in iron tubing for the Great Western line, and followed this method on the London & Blackwall, Leeds & Manchester and Edinburgh & Glasgow railways. While successful, the scheme proved extremely costly because of the damage resulting from water, fractures and contact of the underground wires with the earth. Repair was speeded up by Cooke's invention of the *detector,* which traced the cause of trouble quickly. Still breaks remained both difficult and expensive.

After much experimentation, the Englishman decided to transfer his wires to poles. Strong sixteen- and eighteen-foot timber posts were fixed in the ground every five to six hundred yards. Winding apparatus—corresponding to the number of wires employed—was attached to the top of these poles with several upright standards placed between every two groaning posts. Once the wires were wound to the necessary tension, the apparatus held them tight and parallel, preventing crossing or contact. Immediate results were superior insulation and easy maintenance.

The main feature of Cooke & Wheatstone's electric telegraph was not merely the sending of signals from one place to another at the rate of about thirty letters a minute. It was its reciprocal system which permitted communication between distant places: a system of keys which formed the extreme end of conducting wires, each provided with a self-acting drawbridge by which the circuit was complete for the signals to pass when the signals were received, but was withdrawn at the end from which the signals were to be sent,

while the keys were in connection with the poles of the battery. Once the connection was broken, it replaced itself again. This united and reciprocal property was the basis of the electric telegraph.

EARLY wooden semaphores were fair-weather couriers, blanked out by rain or fogs

IN SPITE of the initial expense, telegraph lines were strung rapidly across England. In the United States, however, telegraphy got off to a slow start. Samuel Morse spent much of his time between 1837 to 1843, writing and appearing before Congress, and tramping through England and France to gain recognition for his invention. There was talk of alloting money, but we were still feeling the effects of the panic of 1837. Then, too, it was an open question as to whether the telegraph should be considered a blessing or a curse.

But while businessmen and government officials wrangled, and Morse became more and more discouraged, the instrument itself was becoming more technically perfect. By this time Morse was no longer working alone; he had the mechanical genius of Alfred Vail as an ally. Taking the crude machine on which Morse had sent his experimental messages at New York City, Vail simplified and strengthened it. For when Morse had built his first telegraph he was working without complete knowledge of the discoveries already made in that field.

Claims have been made that Morse failed to send a message farther than forty feet until Professor Gale—a fellow instructor at New York University—suggested how he might intensify his battery. It's a fact that Gale and Vail were first to enter partnership with Morse. Vail had been a student at the University and witnessed some of Morse's tests. Once interested, he concentrated his energy on its development, persuading his father to provide them with three thousand dollars and a laboratory at their Morristown, N. J. steelworks.

When Morse presented his invention for patent, Congressman F.O.J. Smith, Chairman of the Commerce Department, was so favorably impressed that he resigned his office soon afterward to join forces with Morse, with the promise of twenty-five percent cut in the future profits. Critics imply that Smith's former connections were responsible for the decision of Congress in 1843 to underwrite the building of an experimental line between Washington and Baltimore. While there's no proof on either side, one thing is certain. Congress had delayed action long enough to take the great step on its own hook.

With thirty thousand dollars in credit, Morse began his telegraph line. The B&O had offered its serv-

ices and land under certain conditions: "to afford to Mr. Morse such facilities as may be requisite to give his invention a proper trial on the Washington road, provided in his (the president's) opinion, and in that of the engineer, it could be done without injury to the road and without embarrassment to the operations of the Company, and provided that Mr. Morse will concede to the Company the use of the telegraph upon the road without expense, and reserving the right of discontinuing the use, if upon experiment, it should prove injurious in any manner."* To this the inventor was agreeable. It was the only offer of free land, and he could hardly refuse any feasible plan to test his idea.

EARLY American telegraph lines made the same mistakes as did the English. Opinions vary as to whether Morse ever intended to support his wires on poles. Some say that when he described his telegraph to the Secretary of the Treasury in 1837 he planned aerial wires fixed on thirty-foot spars well planted in the ground and placed about 350 feet apart, along the tops of which the circuit might be stretched. Perhaps Morse was later influenced by the popular distrust of lightning on a string—upheld as reason enough why the telegraph should not follow the posts roads. Or perhaps he thought it would be impossible to maintain the fragile spider-work against winter storms, falling trees and human interference. On the other hand, Morse may never have considered the overhead system until his line reached Relay, where a stone viaduct made the continuation of the trench line impossible; and he discovered at the same time that the buried section was useless.

*Ohms, by Major Pangborn, 1885.

The chief tool in laying the line was a heavy plow propelled by sixteen oxen. The plowshare had been cast by the B&O foreman of the Mount Clare shops moulding room. It made a furrow two inches wide by twenty inches deep, feeding leaden pipes in which the wires were encased from the bottom. On top of the plow's beam was a cylinder holding some sixty feet of pipe which uncoiled and passed down over little pulleys in the rear edge of the blade to the earth cutting line. A plumber armed with a fire-pot and soldering irons followed immediately behind. As the supply on the cylinder ran short, he would wind on a new section and join the ends, thus keeping the operation moving without interruption.

Once the failure of the underground line was learned, Morse appealed to Ezra Cornell—charged with the actual laying of the line—to save face. As dusk was falling one evening, Cornell spurred on his men and teams in one last gesture to the day's work. As the plow neared a large rock along the right-of-way, he grabbed hold of the plow handles and swerved to collide with it, thus destroying the machine. While newspapers recorded the misfortune, Morse and his associates huddled on a change of method.

More than half Morse's allotment for the completed line was gone, and Congress offered no court of appeals. Salvaging material from the buried section seemed imperative, yet Alfred Vail—Morse's expert—declared that the lead covering could not be stripped from the copper wire without melting it. Ezra Cornell believed it could though, and he went to work to prove it.

During the early months of 1844, Cornell evolved his own theory of

wiring, based on the success of Cooke and Wheatstone in England. Redividing the four copper strands, he attached each to a pole, separated by its own glass insulator—a plan so simple and effective that it has been followed ever since. Cutting a square notch in the rough cross-arms, he ran the wire which had been wrapped in cotton and saturated in shellac through two small squares of thick glass. Then he nailed a wooden cover over the glass, both to hold it in place and keep off the elements.

the B&O to Baltimore; many others swarmed into the Capital station and lined the tracks, waiting for the trains to arrive with the news. Overlooking the crowd—in a Capitol room which harbored a strange looking machine with "paper tape, and crank by which a weight was wound up to revolve the rollers through which the tape moved when the message was being received . . . surrounded by pots and jars of the primitive battery"—stood Morse, waiting for Vail's signal.

RELAY, Md., nine miles south of Baltimore—dead end for Morse's underground wire system. Poor insulation and breaks allowed current to escape

By May 1st, unbarked cherry poles had been set in the right-of-way as far as Annapolis Junction, twenty-two miles from Washington. Up until this time Morse had been using a double circuit to work his telegraph, but then he found that the ground made a far better return wire for the circuit. Adopting the new system was a welcome economy. Then to add to this windfall, the political scene provided the telegraph with some badly-needed publicity.

The Whigs were meeting in Baltimore to nominate a Presidential candidate. Those who could travel took

As the first train to leave Baltimore after the nomination reached Annapolis Junction, a note was tossed off to a young man seated beside a table on a crudely-raised platform near the tracks. A moment later he was manipulating a lever on a small machine in front of him, from which wires led to nearby poles. Passengers, who noticed, no doubt wondered. But the real surprise came when they discovered that many city-bound Washingtonians had learned the results an hour before their arrival, though they had had little faith in its truth. The message had been

sent and acknowledged within two minutes and one second.

The next few weeks were momentous ones. On May 14th, Vail wrote: "Telegraphed from the Relay House. All works well." One week later, the line entered Baltimore.

To establish electric current, a wire connecting with one pole of the battery in Baltimore was soldered to a sheet of copper five feet long and two and one-half wide, and then thrown into the harbor. A like copper plate was buried in the dry dust of the Capitol's cellar in Washington. Then came the official inaugural on May 24th, 1844. Wires had been carried into the Supreme Court room of the Capitol, where Morse and a small group of Congressmen and others were gathered.

There was a moment's stillness as Morse laid his hand on the key. "What hath God wrought!" passed on to the wires by Morse's even tapping. The message was returned by Vail from the B&O Mount Clare station, and thus the telegraph was formally introduced.

WHILE the basic principles remained the same, the telegraph of 1844 had gone through radical changes in appearance when compared to Morse's 1835 model, first exhibited at New York University. In the first, the mechanical action of an electro-magnet operated a lever carrying a pencil at one extremity. The passage of electrical impulses through the magnet circuit caused the pencil to move in contact with a paper tape, which turned over a revolving cylinder directly under the pencil, drawing an undulating line which embodied Morse's code. The speed of the paper was graduated by clockwork.

A single wire conductor connected one pole of the battery to one end of the helix of electro-magnet. The other end of the helix was joined to one of two mercury cups on the "port rule." This was a ruler-like board in which metal teeth were set in a row, so that the transmitter lever moved up and down as these notches struck it, making and breaking circuit at short and long intervals to send Morse's famed system of dots and dashes. The second mercury cup was connected to the second pole of the battery, so that the only part of the circuit not complete was at the cups.

When Morse discovered that his current was too feeble to operate the receiving apparatus directly, he devised—with the assistance of Gale and Henry—a relay that would automatically repeat signals into another section of line and join circuits in this way for any desired distance. By 1837, when he filed a caveat in the Patent Office, a great number of modifications had been made, many of which have been attributed to Vail. The port rule was abandoned for a simple key worked manually; and for the original pencil in the register, one of three methods might be used: a fountain pen; an inked wheel; or hard steel points, the impressions of which resembled the Braille printing for the blind.

"Vail invented the first combination of the horizontal lever motion to actuate a pen, pencil or stylus, and the entirely new telegraphic alphabet of dots, spaces and marks," says J. W. Johnston, in his *Telegraphic Tales*, "and he did so prior to September 1837, the month when the old instrument passed into his hands for reconstruction. His more perfect invention of the steel style upon a lever, which could strike into the paper as

MOUNT CLARE STATION: 1835-1946. Within the B&O's first passenger and freight depot, Alfred Vail received and acknowledged the telegraph's famed *What hath God wrought* message

Courtesy of Baltimore & Ohio

it was drawn onward over a ground roller and emboss upon it the same alphabetic characters, was not invented until 1844, about the time when the first line of telegraph began to operate between Baltimore and Washington."

But as far as credit went, Alfred Vail had no comeback. According to his contract with Morse, he signed off his future inventions to Morse for an interest in the telegraph. He could not have obtained patents for them

had he tried. Besides, he realized that the telegraph itself was the thing.

While Morse patented the sound system as part of the original modes of telegraphy secured to him as inventor, it was in anticipation rather than realization. In fact Morse's company, along with the others, vigorously denounced the sound system, having a law passed to forbid its practice. Yet even in the early days of telegraphy, this method began to assert itself.

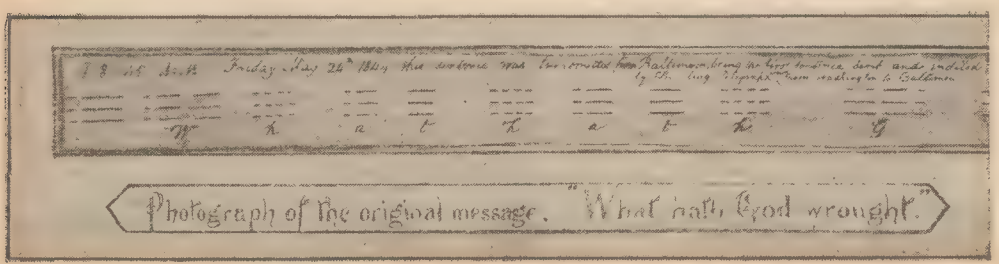
There were many disadvantages to reception by register: the constant winding of the clockwork, the mistakes made by the copyist in transcribing his messages, the whirr of the wheels, the breaking of the weight cord . . . it was no flip of the wrist. In order to run the machine, you had to pull the narrow tape through the register, then gather it up, scan the impressions and write off the message. Yet so determined were the inventors to make reception foolproof and so proud of their mechanism—particularly after the register was made self-winding—that this slowed-up process might have continued for years, but for the challenge of a whirlwind telegrapher, whose fame brought P. T. Barnum to his door.

Jimmy Leonard went to work at the St. Clair Street telegraph office in Frankfurt, Ky., during the fall of 1848. Only fourteen, he had already decided that the telegraph was the great industry of the future. Within a few months he had not only mastered the key, but had won such a reputation for speed that James D. Reid, the Louisville manager, sent for him. A trial convinced Reid that Louisville needed Jimmy.

The youngster's speed record is mere calculation. No one was ever found who could send as fast as he could receive. A copy of a message Joe Fisher sent at the rate of fifty-three to fifty-five words per minute for ten consecutive minutes was part of an exhibit representing American telegraphy at a Paris exposition of that period. This was more remarkable when you consider that wire insulation was so poor it was necessary to keep one hand on the mainline relay in order to maintain even a partial adjustment.

Samuel Morse was in the Louisville office when this test was made, and recognized then that his tape method was outdated. The mechanical register boasted twenty-five words a minute at best. Besides, House's telegraph machine used on several eastern lines could print fifty, using a system of keys resembling those on a pianoforte.

MORSE'S telegraph was proved on the Washington-Baltimore line and ready for adoption as the basis of a rapid communications system;



REPRODUCTION of Morse telegram in dots and dashes, basic code for wire and wireless communications

Photograph of the original message. "What hath God wrought."

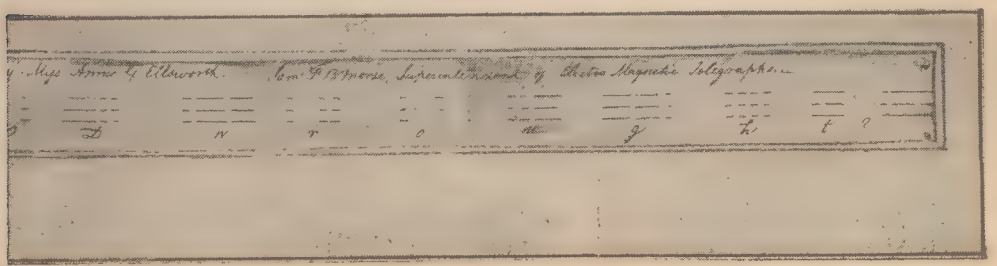
still there was a long struggle ahead. Railroads eyed the telegraph as a rival for passenger traffic, declaring that if men could wire to market they would never travel. Newspapers, more friendly than in the past, remained suspicious; even shrewd old James Gordon Bennett of the *New York Herald* had claimed it would be "greatly to our disadvantage should the telegraph succeed." The average man knew little or nothing about electricity, and therefore regarded it as sheer magic. It was not hard to believe this when wags hung shoes over the wires at night, and next morning marveled at the speedy delivery from distant towns; when train crews telegraphed back to terminals and came up with umbrellas and parcels that riders had supposedly left miles behind.

The tale of an old woman taking her first ride on a railway car was typical of the confusion about what the telegraph really was. "Well, I've often said they'd never git me into the railroad cars," she was heard to remark, "but I know they'll never git me on them telegraft wires." A Congressman who had voted money for the experimental line was disgusted to find he couldn't send his bundle of laundry home by telegraph. So while editors used biblical texts to thunder on the evils that might stem from the telegraph's falling into the hands of the wicked, the instrument itself got little chance to prove its worth.

In Washington where business was done free of charge for the first year, operators played chess and checkers to while away the time. After April 1st, 1845, the line went into commercial operation, sending messages at the rate of four letters or figures for one cent. During the first week, the agent totted up the noble sum of seventy-three cents in tolls. Oddly enough, this was an increase over the number sent free. But even at that, receipts for the first month totaled only twenty-one dollars and twenty-three cents.

Failing to unload his invention on the Government for $100,000—since the ruling brain trust calculated it would never be self-supporting—Morse and his associates began their own line between Washington and New York. Between Philadelphia and New York, their Magnetic Telegraph Company followed the coach roads, since concessions along railroad rights-of-way were unavailable, except at exhorbitant rates. South of Philadelphia, they met better luck. The Philadelphia, Wilmington & Baltimore Railroad, hating to be left out should the newcomer succeed, acquiesced under certain terms.

One of the strangest things about the telegraph was the fear it produced in people and companies of every type. Railroads were no exception in giving it the evil eye. It was regarded as the tool of gamblers who would wreck the status quo of indus-



ARTIST'S version of Vail's Annapolis to Washington message. Instrument shown resembles House printing machine

try and social life, overthrow governments, and cause havoc of all sorts. Each industry saw in it the culmination of its own particular fear—therefore the railroads set out to leach its power to steal passenger traffic, then regarded as the lifeblood of the railroads.

The Philadelphia, Wilmington & Baltimore offered concessions provided it be given one year's option on one-third of the Magnetic stock, either to buy or dispose the right to buy to someone else. Further, should the system find the telegraph system injurious in depriving it of passenger travel, it could require the removal of the posts, wires and fixtures from the road within twelve months after notice was given. Bound by similar restrictions, telegraph lines were strung along the eastern seaboard.

Henry O'Rielly was commissioned by Smith and Morse to stretch the pioneer line westward from Philadelphia to Pittsburgh; and the speed with which this and other lines were slung over mile upon mile of rugged territory proved one of the industry's worst enemies. It was a hard decision to make. The inventors needed both money and cooperation, until the telegraph should be solidly planted in the land. Because they had little of either, they gave small attention to how the lines were constructed, concentrating on rights and profits.

The number of accidents that occurred at this time gave railroads justification for their early cautiousness. O'Rielly thought three-strand wire necessary for strength, since the number of accidents in Massachusetts and Connecticut indicated flimsy wire. Yet when his wire broke—as even it did—the three would sprawl wildly, sometimes getting entangled in the wheels of trains or tearing holes in the roofs of passenger cars. When a company which had leased rights for a route to Boston was involved in the death of one man and serious injury of another, because wires had crossed between the widely-spaced posts, legislatures fixed heavy responsibility on them for damage resulting from their lines.

Although physically the telegraph could not have been more closely bound to railroad facilities, yet it was eight years before the roads grasped the significance of this means of communication. True, Conductor Charles

H. Haskins of the Michigan Southern telegraphed to Monroe on Lake Erie during the winter of 1849-50, ordering a boat held for passengers on his train, which had been delayed; and while not directed to a train official nor governing train schedules, this might be regarded as the first attempt to utilize the telegraph for transporation. But whatever it is classed as, it passed unheeded. Not until 1851 was the telegraph adopted for train dispatching in this country.

THE ERIE in the person of Superintendent Charles Minot pioneered the telegraph for train communication, management of its system, and the guarantee of the safety of its passengers and equipment. Minot's attention was drawn to the telegraph first, when Ezra Cornell began building his New York & Erie Telegraph Line in 1847, trailing the wagon roads through the southern counties of New York, having placed mile after mile of posts through Harlem, White Plains, Peekskill, Newburgh and on west through Goshen, Middletown, Binghamton, Ithaca to Fredonia. Persuading the Erie to invest in a similar line, Minot had work gangs put up poles and wires along the margin of the track, while Cornell supplied him with brimstone insulators and Morse office machines.

Cornell's own line paralleled the Erie at Goshen, the first instrument being placed in a hotel bar room there in 1849. Later on Cornell arranged with Lebeus Vail, who owned a bookstore and printing shop opposite, to have his telegraph in one corner of the store. This agreement was responsible for the fact that Vail's three sons became telegraphers. Hec Vail, the eldest, became the first regular operator at Goshen. As the line reached Port Jervis in 1851, the first station west, Hec took over the newer post, turning the other to his brother Nat.

By this time Erie's line entered the same Goshen office, and crews discovered they could get news about the trains at Vail's. In some cases, they made up lost time by learning how opposing trains were running. They were simply "wildcatting" but they'd come to depend on the telegraph. Still it remained for Charles Minot to declare this instrument the solution to train dispatching, the final authority on the rights of trains.

The first operator to receive a salary from any railroad was D. H. Conklin, a young printer. Conklin had learned his craft from Cornell and when the Erie line was completed but not operating, Minot solicited his aid—upon Cornell's recommendation —to put the Piermont pier battery in working order. Minot made his plans clear then. Not only did he hope to show the location of all trains at all times by the telegraph, but to move all trains by this means. His interview with Conklin was enthusiastic enough to send the latter across the river to Piermont, where after two days' struggling he had the battery operating. Shortly afterwards he called Vail at Goshen, and tests proved that the line was sucessful.

Reporting his results to Minot, Conklin discovered his printing days were over. At the superintendent's order he returned to Piermont to take charge, living for some months on expense money doled out by the Erie. When the line was finished to Port Jervis, Minot detailed his plans for an operating department. Ninety employes would be needed to manage the line, adding a heavy payroll to maintenance costs.

"Now you are an expert," said Minot. "The amount we fix for your salary will govern the salaries of others. I hope, therefore, you will accept thirty dollars a month for your pay, and when the wire is all in good working order I will give you the best office on the line."

With his eyes on the future—the promised office his pot of gold—Conklin accepted the offer. Months later he helped string the first insulated wires under the drawbridges of the Paterson & Ramapo and Paterson & Hudson River railroads, and opened several offices on the Susquehanna and Western divisions. In the spring of 1851, he was put in charge of the Susquehanna Depot, a repeating station and therefore most important on the line.

The first practical demonstration of economy was the use of the telegraph in handling freight. It was the custom to load the holds of boats and barges, leaving certain large sections of the decks clear for the livestock expected upon a train due in at Piermont about 10 p.m. The hitching rack to which cattle were led and tied by bull ropes was just outside the rail. Since the number of head of cattle was always an unknown quantity, the loading of the decks was tied up until the arrival of the stock trains.

Having watched the process for some time, Conklin conceived how his wire might become a great timesaver. To test it, he arranged with the conductor the next night to notify him by telegraph as to the number of cattle he was hauling and what he might expect to pick up at blind stations. That first venture proved its worth immediately. Within thirty minutes after arrival the barges were loaded and off for New York, having saved fuel, labor and time at both ends. Minot could report success to the Erie backers.

Minot not only deserves credit for working out the practical application of the telegraph to railroading, but for playing the leading role in its demonstration. Trains up to the time of his trial run were governed by the time interval system: that a ruling train had right of one hour against an opposing train of the same class. But on that day in the autumn of 1851, a westbound Erie train scheduled for a meet with another at Turner's broke all the conventional rules of railroading.

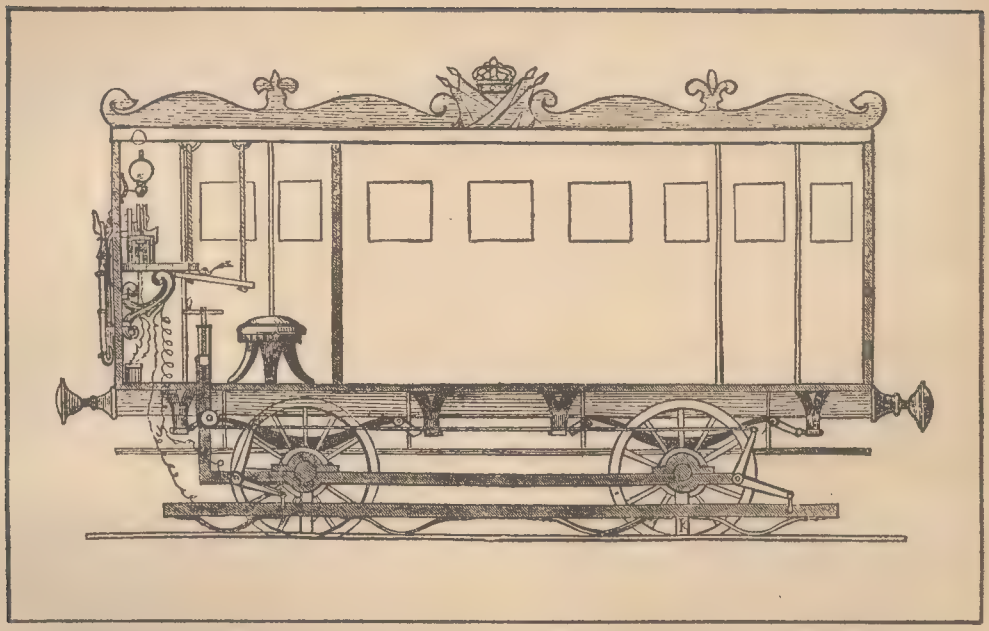
Conductor W. H. Stewart was running the express with the superintendent aboard. Stopped for the opposing express at Turner's, Stewart was ready to wait out his hour, if the other passenger train did not show up in the meantime. Minot, however, was less patient. There was a telegraph office at Turner's and Minot wired to Goshen, fourteen miles farther on, to see if the other train had passed.

It hadn't. Minot then ordered the operator to hold the train. Writing out the following order, he handed it to Stewart:

"To Conductor and Engineer, Day Express: Run to Goshen regardless of opposing train. Chas. Minot, Superintendent."

Edward Mott describes the scene that followed in his Erie history, *Between the Ocean and The Lakes.* " 'I took the order,' said Mr. Stewart, relating the incident, 'showed it to the engineer, Isaac Lewis, and told him to go ahead. The surprised engineer read the order, and handing it back to me, exclaimed:

" 'Do you take me for a d—n fool? I won't run by that thing!' "



TRAIN TALK between head and rear end was possible with this 1856-model telegraph car. Rotating hand wheel ahead of seat lowered the contractors against the rail. Key was attached to suspended table

In the end, Minot piloted the engine, sending Lewis back to the rear coach. And on arrival at Goshen, the crew discovered that the opposing train was still not in sight. Minot wired to Middletown, issued a second order, and they were off again. Port Jervis was next. As Minot pulled into this station from the east, the opposing train entered the yards from the west.

This test proved Minot's point far better than years of argument. Several hours had been saved; safety had been established. From then on, telegraphy had a railroad champion in the Erie system.

POPULAR FEELING took a hand in uniting the telegraph and railroad industries. Railroad accidents had become so numerous that state legislatures were introducing measures to enforce public safety. The New York State Legislature was aroused by the record for the first eight months of 1853: 65 casualties, 175 deaths, 333 injured. In Great Britain, where almost all railroads were controlled by telegraphic dispatching—where speed was even greater—the number of deaths in the preceding year had been fewer than those in the single state of New York: 89,135,729 persons carried and 216 killed; New York, 7,440,653 carried, 228 killed.

Yet in spite of Erie's successful experiment, other roads were slow to take advantage of the telegraph. They were uncertain that the expenditure for equipment was absolutely necessary, though had they studied England's case they would have learned that after paying off its initial investment, the telegraph declared a yearly dividend after meeting expenses. Still the report to the New York State Legislature in 1853 declared that the Madison & Indian-

apolis and the Erie had introduced it, although to a limited extent, and the Baltimore & Ohio and the Camden & Absecom were also getting in line. The Delaware, Lackawanna & Western, however, was really second in switching to electric train dispatching. D. H. Conklin left the Erie to become the Lackawanna's superintendent of telegraph.

Rivalry, however, was the greatest wire slinger. By 1847, O'Rielly who had been constructing lines for Morse, Smith and Kendall had broken with the pioneers and was unwinding lines north, south and west through the Middle West, wherever he found cities that would subscribe enough money to pay the cost. But the lines were thrown up so hastily that the first storm wrenched wires from the oak, pine or hickory posts on which they hung. One average storm put 170 breaks in a thirty-mile stretch of line between Boston and New York.

After 1849, the great westward migration focused the attention of Washington on the telegraph once again. Settlers were pushing their overloaded land schooners across the prairies and the scorched sands of the Southwest to California, the Mecca of the get-rich-quick. Thousands of others had walked or ridden to the Mormon kingdom. If the East and the West were to be one, if the wealth of the newly-exploited territory was not to escape to foreign traders, communication and transportation had to be provided.

Plans for a Pacific Railway to join

Frank Leslie's Illustrated

INTERIOR of telegraph car: signaling ahead to the front end

California and Oregon with St. Louis were proposed by political factions and businessmen. Indians were attacking and burning many of the caravans of emigrants, and threatening to destroy our military forces. But if there were a railroad, or a line of military posts from our western border to the Pacific, protection might be given these settlers.

Henry O'Rielly and John Loughborough had an alternate plan which would have linked up the two necessary contacts with civilization—the railroads and the telegraph. Instead of concentrating forces at four main posts as was proposed, O'Rielly suggested a telegraph line from St. Louis west, with thirty soldiers stationed every thirty miles enroute. Besides protection, this would give a direct route for mail. The wires would be safe: "Indians do not work to annoy their enemies; in all our travels, we have yet to see an Indian chop down a sapling as much as four inches in diameter."

Frank Leslie's Illustrated

TARGET TIME in Texas. Cowboys found posts handy for improving aim, occasionally for hangings; between times, messages passed uninterrupted

The plan looked good from every angle: it would have provided protection to travelers, prevented soldiers from being ambushed in large numbers and chartered a topographical party to go in advance and survey the rail line, thus speeding up construction. However, the project was turned down. When the telegraph was built westward, Hiram Sibley got the contract and his line followed the route of the Pony Express over fourteen hundred miles of Indian country.

According to the agreement, Western Union was guaranteed $40,000 a year for ten years, for which credit in messages was to be given. The Government, too, had its eye on profit. We were moving closer and closer to war between the states. When it came, the North would need gold and silver from the West to finance its struggle.

THE CIVIL WAR put the telegraph firmly on its feet. Many who figured in telegraph and railroad history later on received their training as young operators, serving the armies. And once war was declared, the railroads became as ever the genii

Photo from H. A. Craig, Alexander, N. Y.

FAMILIAR SCENE. Lehigh Valley's 1880 lady op at Honooye Falls, N. Y., followed tradition of Sarah Bagley, first woman telegrapher at Lowell, Mass., in 1846

summoned to answer all government demands.

John W. Garrett, on becoming President of the Baltimore & Ohio in 1858, had realized the possibilities of the telegraph for railroading. Transferring the telegraph lines back to the B&O right-of-way was one of his most important acts. The Civil War upheld Garrett's wisdom in uniting the two. The first effective use of mobile units for armies appeared during this time, when Major Albert J. Hyer—credited founder of the U. S. Signal Corps—organized a telegraph train as an organic part of General McClellan's Union forces for the Peninsular campaign in Virginia in 1862.

These trains—in reality light, closed wagons—were provided with wire and light poles for rapid construction of miles of line, as well as the necessary instruments and batteries for installation of stations. They remained with the Army of the Potomac, but did not furnish their maximum service until Grant took command in 1864, making extensive use of the trains to maintain contact with his commanders in other theaters. During the period from 1861-65, the Government financed the building of more than fifteen thousand miles of line, sometimes under enemy fire, often under cover of night. Unsung heroes of the war era were the boy telegraphers, hundreds of whom were killed in action, taken prisoners of war, and broken by overwork, yet never recognized as soldiers.

After the surrender at Appomattox, a great period of expansion swept across the entire country. The Home-

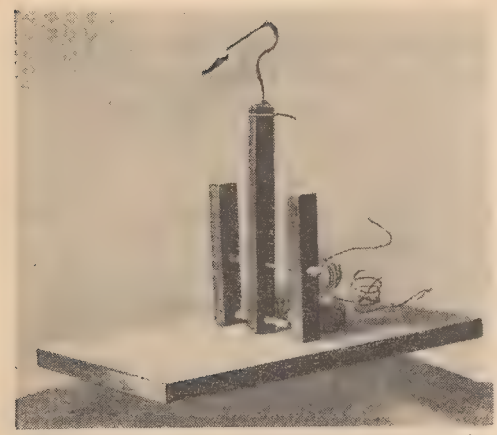
stead Act sent thousands of soldiers and their families westward. Southerners, driven out by the savage destruction of their lands and the plague of carpetbaggers, sought homes beyond the Mississippi. Anxious to increase its unity, Washington encouraged the development of the two great bonds, railroads and the telegraph. In slashing a path through the virgin forests of the Northwest and over the bleak prairie lands, it was natural that they should grow together for protection as well as convenience.

To trace the development of Western Union—the name which today symbolizes the telegraph in America—would be to describe in detail some 500-odd individual companies until their final absorption into one corporation. The name itself was first chosen by Ezra Cornell who built the New York & Erie line, which first drew Charles Minot's attention to the worth of the telegraph. It was then a small company linking New York and Buffalo. But in a short time it became the Erie & Michigan with lines sprawled from Pittsburgh to Cleveland and Buffalo to Detroit. Then in 1856, Cornell joined forces with Hiram Sibley's New York & Mississippi Valley, and Western Union was chartered in New York on April 14th of that year.

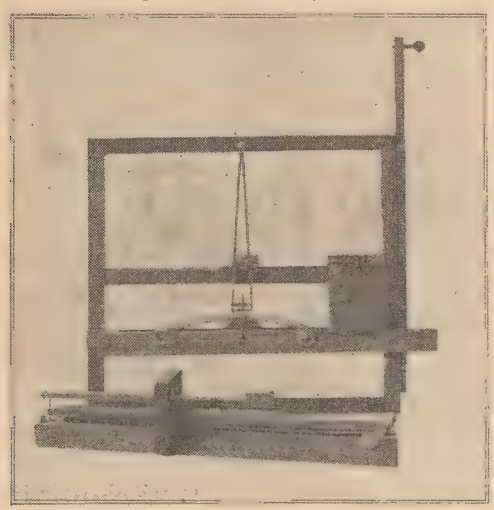
Before discussing the eventual tie-up of railroads and the telegraph, it's interesting to know on what terms they met and agreed. Early contracts between the two were basically the same: the telegraph company furnished the material, tools, wire, instruments, batteries and skilled labor, as well as the supervision required for the construction and maintenance of all lines; the road provided the unskilled labor, hauled the material and telegraph employes free and paid thirty dollars per mile for the original construction and instruments. Once the line was in operation, the railroads took over. They maintained and repaired the line. Commercial business was handled at the depots by company operators or agents, who saw to it that messages were delivered and sent the money collected to the telegraph company, after subtracting the percentage allowed the road for use of its operators and stations.

Railroads were allotted some free wire for their exclusive use, and in addition were given some free telegrams to points off the railroad, which might be necessary for business. The majority of agreements provided for a telegraph superintendent, the joint employe of both companies, and a foreman to direct a corps of linemen. This contract was accepted by about eighty-five percent of all railroads.

ONCE an agreement was made and a line in operation, the importance of the young agent operator took an upward leap, while his salary remained as low as twenty-five dollars a month. In small towns throughout the country, the op had to attend to train movements, sell tickets, answer all inquiries, check, bill out and receipt trunks and express, and cover the loading and unloading of all freight. It was no legal defense for delays in the delivery of private messages, that the contract required certain hours be given exclusively to management of trains. According to the time of their receipt, private messages supposedly took precedence. Since this was not always the case, damage suits for delay of wires filled the courts for years.



PIONEER electro-magnetic telegraph, built by Joseph Henry in 1830



MORSE'S 1837 experiment, with port rule to make and break current

RECORDER used on Washington-Baltimore circuit in 1844

Courtesy of Western Union

Yet blaming the operator was unfair in most cases. The work at some stations called for two men, although in times of depression railroads reduced the force to one, expecting that versatile artist to do the work of two with equal efficiency and speed. Then, too, the railroader had tough times in the early days. Instruments were undergoing changes, and a man might be confronted with a machine foreign to him with no explanation offered.

The early sets were the register type; and while disadvantages were numerous, some railroaders clung to them, since they provided a printed copy of the message. It was not long though before operators seated in lonely way stations along the line began to read the clicking machines by ear, paying little heed to the tape. Railroads were at first vehement in condemning this habit, till individuals like Charles Douglas of the Erie —summoned for a reprimand of Division Superintendent Tillotson— proved beyond doubt the safety and speed this system offered. From then on, registers gradually disappeared, just as the alarm bells had before them. In every town you would find the same simple set.

The Morse telegraph—as known on the railroads—consisted of a key, relay and sounder, with a local battery to operate the latter. If a station was also the terminal of the line, it held the main battery, consisting of 10 to 150 or more cells depending upon the extent of the circuit. The mechanism of the telegraph was simple. The key and sounder were on one board, the key supported by screws on the elevated sides of a metallic base. At the bottom of the base were two screw posts to receive the ends of the wires from the battery; these were insulat-

ed from one another by a non-conductor which ran around the point in the front of the key. In the center of this was fastened a small piece of platinum and directly above it, on the under side of the key lever, another piece of the same metal.

Since one was separated from the other, the current could not pass between them except when the lever was pressed down, bringing together the two platinum points which were in reality the ends of the wire. A spring was used to keep these points apart. The circuit was kept closed, however, by a movable bar situated so as to slide under a lip, thus keeping the wire electrically connected while the key was not in use.

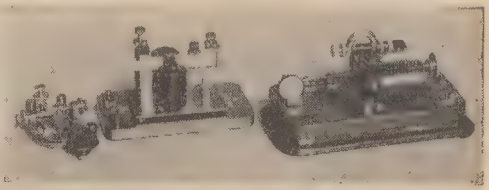
The sounder consisted of two upright electro-magnets, an iron armature attached to a movable lever fixed upon a frame and elevated above the base, with a spring attached to the lever which must be adjusted in proportion to the strength of the current. It was regulated by two devices: one stopped the movement toward the magnets which gave the sound, the other limited the movement of the lever away from the magnet by the spring. In some cases a resonator was used to increase the volume, when the instrument was located in a noisy room.

The third vital part of the telegraph was the relay. This was introduced by Morse when he discovered that the current might become too feeble or variable to operate the instrument satisfactorily. The function of the relay was to open and close the local circuit to which the sounder was connected, by means of which the sounder was made to produce the required volume. Both the sounder and relay were based upon the same principle, becoming magnetized when a

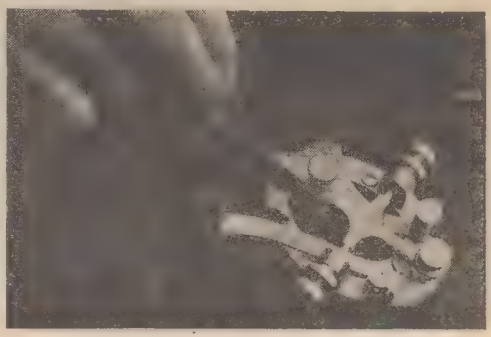
PULSE of telegraph instrument: the key which replaced the port rule

HEAVY screw-supported key, 1850

TAPELESS, compact 1865 Morse set



MODERN relay, key and sounder



FOCUS on the modern key

current was passed through them, the only difference being that the gage of the wire with which the sounder was wound was larger, and its armature and lever were heavier. The armature of the sounder was attracted by the magnetism of its core and withdrawn by its retractile spring when the core was demagnetized. Thus the local circuit was opened and closed, as current flowed through the main line.

LEHIGH VALLEY sponsored induction train telegraphy during the 1880's

It was not uncommon to have thirty, forty or more stations within one circuit with only two main batteries, one at each terminal. Early lines employed the single circuit system: when any one key was operated, all relays acted simultaneously by reason of the alternate cessation and flow of the current. Transmission was limited to one message at a time, and the system was known as the closed system. In Europe, Morse's open circuit was adopted, and while necessitating main batteries at every station, these batteries did not require replacement as often, since they were not required to supply current for the entire line.

Operators were charged with knowing as much about their instruments as was needed to keep them in working order. The strength of the gravity battery was one important charge. Composed of a piece of copper placed in the lower part of the cell with a zinc crowfoot just submerged in the fluid, the electrical action of the battery depended on the strength of the fluid. They were responsible for keeping their tables and instruments clean, to see that all connections, binding posts, screws, and so forth, were firmly connected, and that the wires and crossings over bridges about their stations were clear and safe.

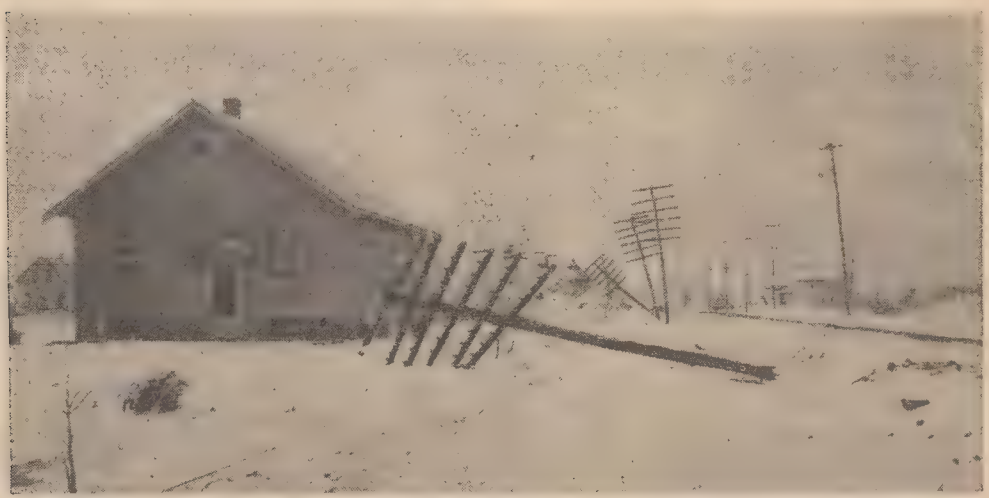
Some railroads, as the Canadian Pacific, opened schools for telegraphers. But the great number of old-timers learned the art from older lightning-slingers who let them do odd jobs about the station to earn their keep.

GRADUALLY as all railroads adopted telegraphy, it became something far removed from the unwanted step-child it had been. From a tool to quote rates, it took over train movements, obviating the arbitrary schedules, and a book of rules was formulated to restrict its usage. Railroad companies included well-organized telegraph departments; and usage pointed out the need of greater precision in constructing lines, of research to find the best possible way of protecting the web of wires against the severe storms common throughout America, which downed mile after mile of pole lines.

Underground cables were no solution; they wouldn't work. Some roads tried using two poles side by side with cross-arms between; others increased their number per mile. Experiments were made decreasing the height of poles, adding stability by reducing the leverage of wind upon ice-laden wires. But one major objection to the shorter posts was that they brought the wires within reach of vandals, and also nearer to brushwood. In highly-vegetated areas this greatly increased the fire hazard.

The Association of Railway Telegraph Superintendents organized in 1882 (which later merged with the Association of American Railroads) was responsible for much of the open discussion and experimentation for technical advancement in this field among railroads. It was a double-edged problem: how give the wires enough support and yet keep the poles from breaking. During storms, wires caught so much wind that their vibration downed them for miles. In the end, research and experiment came up with one practical guard: storm guys attached to each pole, which stiffened that single pole and were designed to prevent the swaying of the line.

From study of the problem of maintaining pole lines, carriers derived a standard which they called the factor of safety. This unit depends upon the number of poles per mile, the wind and ice-loading in that area, the kind of line, number of wires and circumference of the ground line. As a result, safety and economy have benefited, and pole lines have traveled far from the day when wires were hung on trees. In recent years, Western Union linemen have assumed complete charge of maintenance.



RADIO RESCUE. When 1930 blizzard downed hundreds of telegraph poles in North Dakota, Fargo-Bismarck radio hookup patched gap in NP dispatcher's line

But the very reasons why telegraphy became the bulwark of coast-to-coast communications — the invention of Stearns duplex in 1868, enabling messages to be sent in opposite directions simultaneously; Edison's quadruplex of 1874; automatic telegraphy and finally facsimile— attracted numerous financiers out to exploit to the *nth* degree what was probably the greatest money-maker of that half century. It was too good

a thing to miss. F.O.J. Smith, famed for his court litigations in the early days, was responsible for the term *fogsmithery,* meaning chicanery. However, his adventures were the pranks of a Tom Sawyer, compared to what followed.

Once the telegraph stretched from the Atlantic to the Pacific and Western Union formed a powerful lobby in Washington, its development became the growth of one of the country's most powerful monopolies. Company after company was strangled. Stipulated rates were raised to the maximum the traffic would bear, in spite of swelling protests from a nation demanding public control. It was obvious that the free play of Western Union was bound to meet an end eventually; but in the meantime, there were fortunes to be made.

Western Union had every right to feel secure. At the exact time thousands were demanding public ownership—when in 1866 a bill was introduced in Congress to help finance a rival company—in this same year the Government handed over 14,211 miles of former military lines to telegraph companies, to compensate them for their losses during the Civil War. Credit for the award was given General T. T. Eckhart, a telegrapher who became a top Western Union official soon afterward. It was hardly pure coincidence that all lines went to Western Union, or to companies about to be made part of the giant.

It is ironic that a company that offered to come into the fold should later become powerful enough to state its terms of treaty. The Atlantic & Pacific, organized in 1865 and projected from New York to Chicago via Buffalo and then over the Rock Island and Pacific right-of-way to San Francisco, met difficulties during the panic of 1873. Willing to sell to WU, it was rejected since the larger company was having troubles of its own, having taken on too much too fast. This left the line open to Jay Gould, who, having left the Erie by invitation, was looking for bigger game. Taking stock in the A&P and then the Union Pacific, he put both to work for Gould.

Jay Gould put the telegraph industry through its economic paces, as he had the Erie a short time earlier. Striking up friendship with General Eckhart, Gould sold him on accepting the presidency of the growing A&P.

And under Eckhart's rule, the A&P grew to 17,759 miles and twice as much wire by 1877. Then war with Western Union was on.

Jay Gould had strong weapons. He had robbed WU of its superintendent of the Eastern Division—Eckhart—and Eckhart in turn had swung Thomas E. Edison over to their side. While experimenting with George Prescott to double the carrying power of the Stearns duplex, Edison had agreed to sell it to Western Union and had received a part payment of five thousand dollars. Hard pressed for cash and unable to contact WU's president who was in Europe, Edison was approached by Eckhart who wanted to put him in touch with someone who was interested in his work. Gould proved interested to the extent of thirty thousand which Edison accepted. One week later, Eckhart left Western Union to join Gould, and Gould had both a director and a patent.

Western Union's 1877 rate war to crush her rival was short-lived. With-

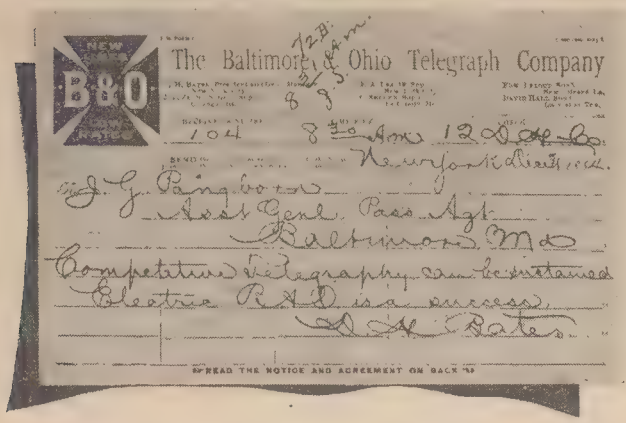
in a few months Jay Gould was able to pocket over a million in cash and a block of Western Union stock as the price of peace between the two. A pool was made of the two companies; Western Union was to get seven-eighths of the annual income, Atlantic & Pacific, one-eighth. It was another year before Western Union realized Gould's real strength.

The era that followed was marked by court battles between telegraph companies and various railroads. The Baltimore & Ohio was the first. It ordered Western Union to remove its lines from B&O right-of-way from Baltimore to towns in the Ohio River valley. Its charter to the Western Telegraph Company, which had passed into Western Union hands, gave it this right which the court upheld. The B&O took over its own system, later leasing it to the Atlantic & Pacific.

By 1879 it became obvious that Gould's previous manipulations had been practice shots, that he was now ready for the showdown. On May 15th, 1879, he organized the American Union Telegraph Company in New York with a capital of ten million dollars, which he incorporated with Bates and Tinker, the former named as president. Then in January 1880, Eckhart left the presidency of the A&P to take hold of the newer firm, this owned entirely by Gould. Leasing Canada's important Dominion Telegraph, he allowed it to buy into his new corporation. When President Garrett of the B&O bought stock and became a director, Gould felt confident that with his connections he would have no trouble in swinging his new venture.

Railroads were kept busy issuing notices to Western Union to vacate their premises during the years that followed. Without warning, American Union took over the B&O lines, and through Gould's influence as a heavy stockholder were able to seize the wires along the Union Pacific, Kansas Pacific, and Wabash, and make profitable terms with the Pennsylvania, Western & Atlantic, Pittsburgh, Cincinnati & St. Louis, and the Cincinnati Southern. Gould's tremendous backing — which comprised a railroad empire—enabled the company to claim 2,000 offices, more than 10,000 miles of poles and 50,000 miles of wire at the end of the first year, slicing $5,000 a day off Western Union's revenues.

W. H. Vanderbilt—no slouch himself when it came to combining railroads and Western Union profits—sent a note to Gould on January 9th, 1881, asking compromise. Once again the prodigal returned. Gould merged his American Union with Western Union, and accepted fifteen million, mostly in WU stock, for his company. What Gould cleaned up by buying Western Union stock at the record



From Ohms, *J. G. Pangborn*

OLD FORM of independent B&O Telegraph Co.

Courtesy of Canadian National

POLE GANGS erect quarter-mile a day, number of poles varying from 26 to 60 per mile

low he had forced it to is inestimable. One thing is certain. When Gould died some twelve years later, he left more than $56,000,000, consisting mainly of Pacific Railroad system, Western Union, Santa Fe and other rail properties.

THE NEXT ten years were less troubled. Western Union had wiped out all contenders except the Baltimore & Ohio Telegraph Company, which cut loose and maintained its independence with 6,886 miles of poles and 47,417 of wire from Gloucester, Mass. to Savannah, Ga., and westward to Kansas City, Omaha, San Antonio and Helena, Mont.; and the Boston & Merchants centering around the Hub city. The latter was licked by the panic of 1893; and until Postal Telegraph was vitalized by Clarence Mackay's millions, there was comparative peace.

In 1901, the contract between the Pennsylvania Railroad and Western Union expired, and WU refused either to consider modification of the terms of a new agreement or to set a fair sale price on the pole line. As a result, Cassatt of the Pennsy ordered Western Union off the right-of-way, and arranged with Postal Telegraph for service. Still no steps were taken toward conciliation. Finally, Cassatt sent locomotives to root up the poles; and even then, the telegraph company would not cart them away.

Years later the Pennsylvania telegraph lines were returned to Western Union, and this marked the last real tussle of the two. As far as railroads were concerned, however, 1908 was the climactic year. It was then that the telephone made the second change in the method of train dispatching, and all carriers began to include the phone as part of their telegraphic systems. It was an easy switch to make. The pole lines were there, and it only meant adding new circuits and introducing new office instruments.

Oldtimers clung to their Morse as long as possible. The clattering key was second nature, music to the operator holding down the night trick in a lonely way station. If you didn't want to spill your grief to some guy down the line, you could lie there and listen to others chew the fat. Then, too, the railroads and the telegraph had grown side by side, while the frontier was pushed right into the Pacific. The experiences of railroading in its pioneer days: the

Wide-World Photos, Inc.

ICE-LOADING threatened to cut off all power in Moberly, Mo., where railyards were snow-locked. ***Below,*** H-type fixture carrying usual sixty wires, distributes weight, reduces strain

uncertainty of schedules; the washouts of early structures; the thousand accidents that might have been, but were avoided by the quick think-

Courtesy of New York Central

NEW dispatcher's office at Syracuse, N. Y., nerve center for New York Central way-station communications

ing and daring of young telegraphers —these and many other memories very like them were bound up in their feeling toward the telegraph, experiences that "knights of the key" were loath to surrender, even though necessary.

Yet there was no stopping the telephone, which had proved its value beyond doubt since introduced in 1876. Each year, the mileage of telephone-directed dispatching increased at the expense of the Morse, until today there are some lines, like the New Haven, which dispatch all trains by phone.

Many of our big systems fall just short of this record: New York Central uses Morse on a very few minor branches; the Pennsy on the 132-mile stretch between Morrow and Zanesville, Ohio; the Santa Fe, 1,-532.2 miles of wire versus 10,654.5 by phone; the Erie—leader in the use of telegraphy—426 branch miles dispatched by Morse, 2,000 by phone. The most utilized form of telegraphy is the teleprinter, which handles daily car reports, Pullman reservations, car tracers, reconsignments, special passenger equipment, and general messages on the majority of lines. On an average system, these may number twelve to thirty-six million messages annually.

Telegraphy in 1947 is in some aspects a strange throwback to early Morse. With modern techniques, two of his basic plans have proved possible and practical. The overloaded poles, crossed and doublecrossed by numerous wooden arms, have disappeared from the city streets; there, and along thousands of rail miles, heavy cables simplify the problem. Also, since the 1920's, Western Union has been using the teleprinter, on which operators write on keyboards

Courtesy of Canadian Pacific

PILLOWED snow means work, not poetry for telegraph linemen. More destructive by weight is sleet, which snaps wires and topples over poles

similar to typewriters. Telegraphy has gone back to the printed tape.

The latest development in telegraphy ready for immediate adoption by the railroads is *telefax*, or the facsimile technique. By means of facsimile machines, crews can transmit their own messages by merely dropping them into a slot in the mechanism.

This remarkable machine automatically wraps the telegram around a revolving cylinder in the telefax cabinet and sends the message over the line to a receiver, where it registers its copy. Already, the Pennsy, Norfolk & Western and Delaware, Lackawanna & Western are experimenting with using facsimile stations; the Pennsy since 1942, when five locations were chosen.

Western Union supplies fascimile

equipment on a rental basis, and there is some expectation that its use may be extended to other than unguarded block stations. At present, the Pennsylvania has them on the job at: "G" Block Station, Belvidere branch; Weigh Scales, Wilkes-Barre Division; "BI" Block Station, Indiana branch; Xenia (Ohio), Dayton branch; Harvey (Ohio), Sandusky branch. Operators transmit orders here. When the conductor or engineer opens the shelter and removes the instructions, he acknowledges his receipt by phone. While unnecessary in ratio to efficiency, this is imposed as part of the experiment.

Although the telephone has offered stiff competition during the last quarter century, radio is now the contender. Lehigh Valley was a pioneer when it started train telegraphy by induction about fifty years ago; but this method takes a back seat now, when Rio Grande *Flying Utes* can clip three hours off the 570-mile freight run between Denver and Salt Lake City by their intra-crew coordination via radio.

The Delaware, Lackawanna & Western tried out radio over thirty years ago; but their primitive sets had none of the smooth action of the D&RGW models and failed to pass the test stage. Other roads made similar tests with similar results; equipment was far from perfect. Now, however, besides end-to-end communications, these radios employ nearby telegraph wires to strike train-to-station and station-to-train contacts, without interfering in any way with regular telegraph traffic..

The Rio Grande tests have amply proved radio's flexibility and stamina. The mountain run between the Utah and Colorado capitals hazards fifty tunnels; variation in altitudes up to three thousand feet, in temperatures between zero and about forty degrees.

Handling trains at the speed and density they're running them demands a combination of every known precaution to guarantee safety. Thus aware of the advances made in allied fields, railroads are now focusing their attention on Western Union's new radio transmission. Designed for volume telegraph loading, it is probable that micro-wave trunk systems will in the next few years establish connections between major U. S. cities. Within the coming twelve months, a radio-beam hookup will be installed linking New York, Washington and Pittsburgh.

Ultimately, radio systems may replace the pole lines and the hundreds of thousands of miles of wire in the present telegraph network. As far as railroads are concerned, however, the use of radio will be limited for the time. Station-to-station tie-ins along the rail lines must await the development of suitable equipment, and the transition of wire to radio will be gradual. For the removal of poles requires government approval, and could not occur until radio relay operation had become established on a commercial basis, and existing contracts between Western Union and the railroads permit such usage.

A milestone in the employment of modern railroad methods was the recent trial of radio facsimile telegraphy for front-to-rear communications, and orders directed by radio to a moving train. It seemed only right that this should be demonstrated on the Baltimore & Ohio's Washington-Baltimore line. Once again, the historic message "What Hath God Wrought" registered a first.

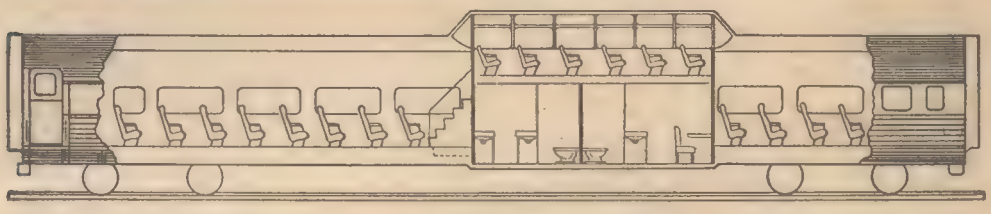
Vista Domes

SINCE the rugged Nineties when mountain travelers took in scenery and ozone through a flurrying fog of cinder-dust and smoke, public clamor has been for some sort of cyclaramic palace. Increased train speeds with consequent decrease in comfort, led to discard of the observation platform, followed by the so-called "innovation" of the solarium car, which retained the superficial character of its predecessor, while giving a glassed-in view of the scenery. Now, with intensive competition from airlines and highways, attention has been re-focused on this secondary selling point; and we find both car builders and railroads intent upon realizing for the traveling public its dream of penthouses on wheels. The "blister" may well be as final as it is ultra in the long search for the perfect type observation car.

All photographs courtesy of Chicago, Burlington & Quincy Railroad

BURLINGTON'S fleet of Diesel-powered, stainless steel ***Zephyrs*** will feature five Vista Dome cars to the train. ***Above:*** The penthouse view in CB&Q's pioneer car of this type

ABOVE: VIEW from the ***California Zephyr.*** Thirty such cars will provide streamlined and scenic service from Great Lakes to Golden Gate. ***Below:*** Dome seats 24; coaches, from 50 to 54; parlor cars, 29



BURLINGTON'S Chair Car, accommodations grouped as in diagram, recently made two Texas trips carrying groups of summer camp youngsters. ***Below:*** Close-up of central portion raised above washroom facilities

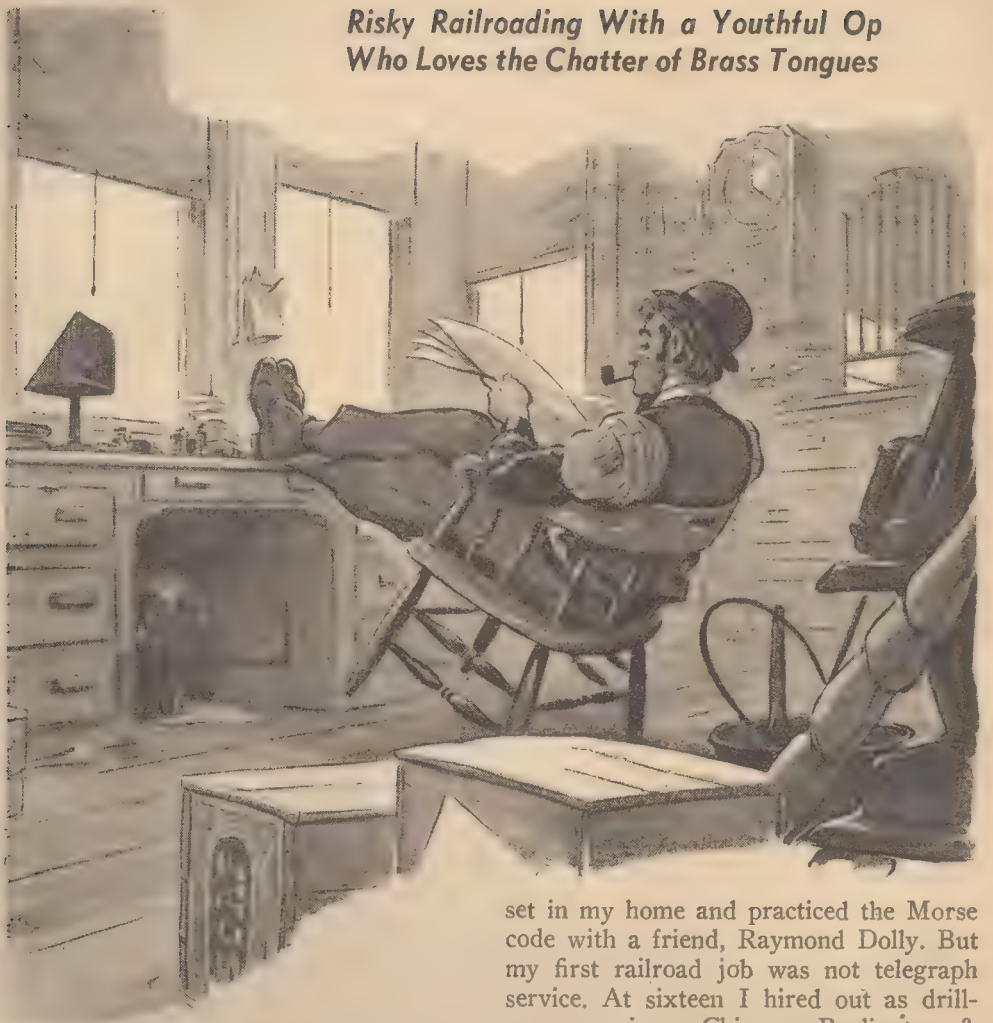
Traveling Op

By
MARSHALL E.
SCHAEFFER
(As told to Leroy Palmer)

YOU can't blame a guy, when years gang up on him, for looking back at his youth through rose-colored glasses, particularly if he's a railroad man. I do it myself. There's a common tendency for old-timers to say that in the Nineties the world was less troubled than it is today. It really wasn't. We always have war and poverty, depression and strikes—they come in cycles.

In 1893, two years after I was born at Chicago, a panic swept the country, followed in '94 by the greatest of all railroad strikes. And just beyond the turn of the century, about the time I became an orphan and began living with an uncle, another depression added men to the breadline. That was when I was too young to interest myself in economic problems, but not too young to be fascinated by the CB&Q trains that passed our house in Lawndale, Ill., a Chicago suburb. The trains ran so close to us that I could almost reach out a window and shake hands with the engineer. Two signals nearby, governing the westbound iron, were operated, I think, by distant towermen. As we watched, they seemed to bob up and down

Risky Railroading With a Youthful Op Who Loves the Chatter of Brass Tongues



constantly, for traffic was very heavy.

My earliest ambition was to fire a locomotive, but Fate willed otherwise. One warm, cloudless afternoon a group of us boys stood outside a depot listening to the Morse chatter of a brass tongue. At length I ventured inside. Picking up a copy of *The Railroad Telegrapher,* I thumbed through it, reading here and there; and suddenly, as if a door were opening, I became aware that some day I would be a brass pounder myself. The magazine gave me a desire to learn telegraphy, and all the duties of station agent, ticket clerk, towerman and railroad accountant.

Returning home, I installed a telegraph set in my home and practiced the Morse code with a friend, Raymond Dolly. But my first railroad job was not telegraph service. At sixteen I hired out as drill-pressman in a Chicago, Burlington & Quincy machine shop where Raymond's dad was a foreman.

I liked being around locomotives. Often I'd climb into the cab of a ten-wheeler to eat lunch, toy with the mechanism, and imagine myself Casey Jones at the throttle. This practice came to a sudden end on the day I grabbed the airbrake valve of an engine under steam and pushed it to the left. *Kerchoo,* coughed the old girl. Terrified, I quickly turned the lever in the opposite direction.

That was much worse. Unable to stop the noise, I trembled lest the roundhouse foreman, Mr. Lewis, hear it. Finally I got her shut off and breathed a sigh of relief.

My job was all right enough, but the combination of summer heat in the shops, long hours, and small pay was no bed of clover. I can see them yet, the big engines rolling across the turntable to pick up their trains and back into Union Station. Sometimes their stacks emitted clouds of black smoke that nearly gassed me. On top of all this, a fellow worker easily talked me out of wanting to stay in the shops and revived my craving for telegraph work.

This goal I reached through Marshall Goodpasture, a tenant of my uncle's. Mr. G. lived next to us and was employed by the Burlington as a relay operator in the GO main telegraph office. He assisted me in rigging up a line from his apartment to connect with my telegraph set. First thing in the morning he'd call me on the Morse wire. His calls thrilled me. They created the illusion that I was a real lightning slinger.

He also helped me to get a job as messenger boy in his office. There I met Daniel Willard. The future Baltimore & Ohio top man was then second vice president of the CB&Q. I saw him several times a day. Among my cherished boyhood memories is that of Mr. Willard seated at his desk, his hair slightly graying and a ready smile lighting his face. Seldom did he have anything but a kind word for us boys as we laid messages on his desk. During the national panic of 1907 the Q, like other companies, cut its payroll sharply. Sometimes whole departments would be lopped off. We boys delivered many messages ordering reduction in forces. When one of us entered a room the personnel would get the jitters for fear their time had come.

I liked to visit the office of W. L. Barnes, Superintendent of Transportation, and study his big board that showed the location of every "redball" car on the Burlington system. Many a time I watched the man in charge of it change the records. The board was about eight feet by thirty, slightly tilted like an artist's easel. Lines extending from town to town represented the entire system. Wood blocks about six inches square, each indicating a redball train, were hung on hooks all over the board. The blocks were adorned by buttons signifying "expedite" cars.

Continually over the wire came reports telling of these cars set out or picked up. In each case the train was mentioned, the car being designated by a symbol letter and number. The man at the board could thus keep tabs on every hotshot carload. When tracers were received for a certain manifest car it could be located very quickly. To me the sight was wonderful.

ALL large Morse telegraph rooms are bedlams of magpie sounders. I've been told that adjoining the Western Union headquarters in Los Angeles there used to be a restaurant called the Madhouse Cafe, where the old telegraphers ate. The name doesn't surprise me. Before I got in on the game myself I wondered how in tarnation an operator could copy from one instrument while all the others were making a roar of jangled sounds. Later I learned from experience that part of a Morse man's skill was to concentrate on one sounder by excluding all others.

When I was sixteen I spent much time on practice in sending and in listening to the work of experts. I picked it up rather fast. Soon I could read what the lightning slingers tapped out, but at that time I could not have put it down on paper like the veterans did. It is easy to understand why old key men lament the passing of the big Morse rooms. The work recalls happy memories. A gilt-edged operator was proud of his sine, that snappy "QJ" or "KN" or whatever it was. Ops were known by their sines all over the system, and those boys were good. Most of them could carry on a conversation with someone while copying—without making an error!

Many tales are told of Morse men's ambidextrous skill. Not only were all good relay men able to write with one hand the office calls, operators' sines and the time on telegrams, but legends persist that some could actually write a telegram to be sent and transmit another message simultaneously! I myself could never do that. I

never even witnessed such a performance, but I believe that it could be done and occasionally has been done. If anyone who reads this article can shed light on the subject I wish he would write to me at 15 Woodruff Avenue, Brooklyn 26, N. Y.

Lightning slingers got to know each other's "voices." Before a sender had made a dozen dots you could recognize whether it was "BM" or "RN." The most skilled men transmitted with a rhythm so perfect that listening to it reminded you of fine music. Operating the teletype and printer machines of today can't compare with the oldtime Morse work in interest or pleasurable sensations. To me they are cold, dull and mechanical.

We had several wires so busy that men were assigned to that desk and worked there exclusively. Some of the hot ones that oldtimers may remember in the Chicago GO office were the strings going to Omaha, St. Louis, Galesburg and Aurora. Other circuits were like the "woods" wires in commercial offices, cleared only at intervals when the operators got around to them. One of these was the Aurora Storehouse or "SH" wire. One Saturday afternoon "SH" was calling. Joe Castle, the St. Louis man, said:

"Marshall, sit down there and see if you can't clear up with the Storehouse."

It was my first actual experience, a rather warm assignment for a student; but after the first few perspiring moments I managed to receive from the op at the other end and then I sent him my stuff. That was called "clearing" a wire. Of course, I was highly elated. After that I would sit in on this desk whenever I got a chance. The boys in the office got to calling it "Marshall's wire." That work quickly made an operator out of me.

Sometimes when I hurried back from lunch Earl Woods, the Aurora man, would let me sit in with him on his wire, a quadruplex circuit. While Mr. Woods was receiving, I was sending on either the polar or the common side of the circuit, whichever we happened to be working. If I didn't send good Morse my receiver would have to "break" and thus delay the work of the four men working our half of the circuit.

The wire was right next to Chief Crandall's desk. I knew he heard every letter, so I strove valiantly to do a good job. With four fellows on the other side of the quad, that made eight men handling one wire. We thought it quite wonderful at the time, but I understand that even this has been improved upon with the teletype systems. It appears miraculous until you study the mechanism of the instruments; then the stunt is really simple, though it took Thomas Edison and other inventors years to perfect it.

Every morning we would get long reports for the Chicago brass hats, covering the movement and delays of all trains on the system. There were—or should have been—copies for each officer addressed, but once in a while some operator would leave out one of his carbons and be shy a copy. Then I would get to resend the report over a dummy wire while he copied it. That was my chance to show speed. I'd get a thrill out of "pouring it on" the receiver.

ALL THIS was increasing my skill. I had now become so efficient that I was offered work right in GO office as a regular telegrapher. The other brass pounders advised me to stick and take a position there, but the boomer urge started to function at this point in my career. The idea of being stuck in a confining office like GO didn't appeal. I preferred to be outside where I could pick up other angles of the game.

My old records show that May 31st, 1908, was my last day's work in GO. I quit there, worked for a year as U.S. Navy signalman, and then mosied over to the Chicago & North Western depot in the Windy City at Kinzie and Wells streets. Walter S. Johnston, the chief dispatcher, had offices upstairs. I hit him for a job. Mr. Johnston had an opening for a helper at Lombard, Ill.; but, by copying actual messages being sent over the wire, I convinced him that I could handle a night job myself.

He sent me to Wheaton, Ill., about twenty-five miles west of Chicago. That town was the home of many C&NW officials and star ops. Though I was a pretty fair brass pounder, it was a new experience for me to be on a real telegraph job. The $52.50 a month I received was good money in 1909. I worked twelve hours, but sometimes I got as many as three hours' sleep on duty after midnight.

Here I learned a trick that all night ops had to know in that era of twelve-hour shifts, to wake up for my call. I would be dead to the world, stretched out on the long desk with a couple of waybill copybooks under my head for a pillow, dreaming that I was paralyzed and could not move to answer my call, which I heard plainly. Suddenly I'd awaken with a start. "WH" was being repeated rhythmically, with pauses between calls, by the dispatcher, who, of course, had served his time as a night OS man and knew what it took to arouse a sleeping op. Wheaton was doubletracked, so I had a few train orders, but was obliged to be on deck when the dispatcher called.

Excitement featured my first night at Wheaton. Just before 6:30 a.m., my quitting time, a patron came to the ticket window to tell me there was a broken rail in the track near the station. I hustled out to examine it. Sure enough, a piece a foot long had snapped off near the joint. I knew a fast freight was due soon; so, grabbing a red flag, I hurried down the track toward it.

Navy signals are given in the upper quadrant, and I had just quit the Navy. Its practices were fresh in my mind. When I saw the freight, I waved the flag back and forth from left to right over my head, instead of in the lower quadrant as it should have been for a railroad stop signal. It might have been taken for a highball; but maybe the hogger went by the rule, "Any object waved violently by any person on or near the track must be respected as a signal to stop," for he stopped the train. Then and there I was shown how to give a "washout."

We had five wires in WH office and at times I'd do considerable telegraphing. When a wreck occurred along the line at night I had to copy the full report for C. B. Smith, the company's general claim agent, who lived in Wheaton. I was instructed to use my own judgment as to whether to awaken him or not. If I didn't call him and the matter was important, I'd get jacked up. On the other hand, if it wasn't but I dragged Mr. Smith out of bed, that was not so good, either. One night the operator at Arlington, S. D., overlooked a train order and we had a big pile-up at Brookings. I remember giving Mr. Smith a long list of names of casualties.

Number 6, an express train, was due at 5:47 a.m. The express agent was not on hand at that hour, so I worked the train for him. A florist at Wheaton would often have a truckload of roses and carnations going to Chicago hotels. I received no pay for my trouble but was allowed to help myself to flowers. Usually I selected a big bouquet of short-stemmed roses. A veteran brakeman on another passenger train got wise to the rose deal and would come into the office for a few flowers to give to lady friends on his train. These blossoms made me the white-haired boy to the telephone girls in the local exchange. They'd stop by on their way home from work to beg for roses. One of them, Veronica Fox, married the night op, Joe Cassasa, who settled down at Wheaton and eventually became agent.

TWO BROTHERS, Joe and Hartley DeWolfe, freight conductors, lived in that town. When Hartley's freight train rolled by enroute back to the yard, he would wave us a high sign, whereupon we'd call up his wife and she would have a hot meal waiting for him. One night he tossed off a Christmas tree that he had cut somewhere along the road. I took care of this tree until he came after it. For these favors his wife, who was quite pretty, occasionally brought us a box of home-made fudge to be divided among the office force. Her visits were bright spots in our office routine.

A man named Grange, the town's night

patrolman, would come in for a chat now and then. He was the father of Harold "Red" Grange, the "Galloping Ghost" of football fame, and was mighty proud of the boy. One morning Patrolman Grange's visit was more than a social call. This is what happened:

About four o'clock the depot coal scuttle became empty and I took it out for a refill. Glancing behind the coal shed in early morning twilight, I was surprised to see three young women hiding there. All three wore blue uniforms with thin white stripes. A conversation followed. The flossies admitted having run away from the St. Charles Home for Girls at Geneva, Ill., which they described in unladylike terms, and tried to cajole me into helping them. Their plan was to take the first train to Chicago, but I don't imagine they would have gone very far in those outfits. I induced them to wait inside the station.

In due time Mr. Grange came by and arrested them. At his request, I assisted in herding the three delinquents over to the town jail. There they were locked up and a few hours later were returned to Geneva. I hope they have since taken the straight and narrow path.

Sometimes I would get a "23" message, that number being the main-office signal for a message to be copied by ops all along the line. One night a 23 warned of a cold wave heading our way. This was issued so we could protect livestock and certain other freight. Later, an old lady with a little grand-daughter came into the waiting room. They had just missed the eight p.m. local passenger train to Winfield, the first stop west. Snow had started to fall, the mercury was dropping, and a wind howled outside. The travelers were in a bad way. Another train, Number 67, was due at this station an hour later but it didn't stop at Winfield, where the lady and child wanted to go. The next local would not roll in before midnight. I called the dispatcher, "Doc" Herrick, and explained the predicament. Doc was big-hearted. He issued orders for 67, which regularly stopped at Wheaton, to pick up the two passengers and let them off at Winfield. Thus two people got home before the storm had whipped itself into a fury—two people who would always have good reason to think kindly of the C&NW.

A fast train, the *Colorado Special,* did not ordinarily stop at Wheaton, but we could flag them for passengers. I got a kick out of swinging my green and white lanterns in front of this fast boy when I had travelers for Colorado. I talked with some of these folks and got to thinking about the Rocky Mountains and longing to see them. Why not go? I was free and as a competent telegrapher I could land a job 'most anywhere.

In 1910, when the first warm days of spring stole over the prairie, the urge was too strong to resist. I flagged the *Colorado Special* and climbed aboard. My next job, this time back on the Burlington, was at Pinneo, Colo., about a hundred miles east of Denver. I needed more train-order experience and knew I'd get it there on a single-track main with plenty of train movements. Pinneo was famed for its mountain scenery and cattle ranches. That spring and early summer I enjoyed its clear bracing air.

The Order of Railroad Telegraphers had just won its fight for better working conditions. With the Hours of Service Law in effect, the wearisome twelve-hour shifts at continuous offices were past history. This was a great step forward for us. I fell heir to the third trick. Three men, the agent and two trick telegraphers, worked eight hours apiece. Each of us was single. Our living quarters were on the second floor of the depot. We batched together, getting our grub from Akron, the next station east of us.

Most of the time I served as cook—the other two disliked kitchen work. The local crew often took dinner with us. As they left, big Tom Stafford, the skipper, would throw a handful of silver on the table, so I was almost running a restaurant.

DOWN from the hills one night came a hard rain, almost a hurricane, and with it a sleety rain. It blew out the train-order semaphore light. The pole, a steel

THAT pole swayed like a straw in the wind

one, was extra high as we were located in a dip. Malcolm Browning, the second-trick operator, who dressed like a city slicker, was timid about climbing so high. Someone yelled "Where's that doggone sailor?" This meant me. They had heard me tell about the lads at Newport Naval Station climbing masts and rigging of the old frigate *Constellation* when in training, so I was elected. Brother, that pole swayed back and forth like a straw in the wind. It was all I could do to hang on with one hand and keep from being blown off, while I changed the lamp with the other hand. That experience seemed like a nightmare.

Another incident comes to mind. We used to hang a pouch on the mail crane for Number 6 to pick up on the fly. One night a poker fell into the gangway of their engine and slid out until it caught the mail bag as they went by, knocking it off on the ground. We didn't know they had missed getting the mail until we found the pouch not far from the crane after the train had passed. I often thought I was lucky that I hadn't been given orders to hand up to Number 6 that day.

Don't ask me why, but in July I quit, returned to Chicago, and on July 15th, 1910, was working for the C&NW as agent at pleasant Cherry Valley, Ill. The agent, Sheeley, had ten children, which was doing pretty well, even in those days of mammoth families. Cherry Valley is on the Freeport branch. Its lush Mississippi Valley farming country was quite a contrast to the rugged mountain scenery I had just left. Here I learned plenty about one phase of station work, the monthly freight report. Agents now generally make these reports daily, but then all the data piled up until the month ended. Business was brisk. I struggled with my report and finally finished ten gargantuan pages, each twenty by thirty inches.

Around that time I worked several C&NW jobs, including a short stretch back at my first love, Wheaton. A certain morning the *Pacific Limited* put off a boy at Wheaton because he had no fare. The little fellow had dropped his ticket—it was later found on the car seat. After taking

him to Mother Funk's for a tasty dinner I put him on another train. It turned out that his father was a wealthy Milwaukee citizen. The railroad claim agent called to see me and was pleased to learn that I had taken good care of the lad. Thus we made another friend for the road.

One day a girl of about ten came to the window and asked for a round-trip ticket to Winfield, handing me six cents. I asked her how she figured it.

"One way is six cents," she said brightly. "Half of that is three cents. Two times three is six."

This was correct by anybody's arithmetic, but the tariff read, "No ticket sold for less than ten cents." Even so, I didn't have the heart to refuse. I sold her the ticket. It was worth four cents to see her happy grin when I said, "That's right."

After working another spell on the Burlington, I found myself at Denver, broke and unemployed, in February, 1911. Wandering disconsolately around Union Depot, I bumped into a fellow boomer. He tipped me off to the fact that the Order of Railroad Telegraphers had offices on the second floor of that building.

"The Rio Grande's general chairman is E. L. Stump," advised the brother. "He'll fix you up with a pass on the Union Pacific."

So I barged into the office and showed my card. I still have this card, with "OK, E. L. Stump," written on the back. I knew, of course, that in those days plenty of brass hats had no respect for ORT credentials and that some roads, including the Santa Fe, would even fire an operator whom they caught carrying a card. But the UP was friendly. A desk clerk took my card to a brass hat and came back to ask whether I wanted to go to Omaha or Salt Lake.

"Make it Omaha," I said, knowing that there I could wire the North Western's chief dispatcher, Mr. Johnston, and he would give me a pass further east.

Well, sir, you could have floored me with a feather when he returned with the pass to Omaha, for on it was written, "Issued on account of traveling operator." I chuckled as I bounded downstairs to see about an eastbound train. I'd heard of traveling auditors, engineers, firemen and conductors—but a traveling op, that was one for the book.

MY NEXT JOB was at Aurora, Ill., on the North Western. I was secretly flattered when the conductors began calling me "Oldtimer" instead of "Kid." It seemed to indicate that I knew my stuff. But I did not stay long at Aurora. Hearing some nice things about the Soo Line, I decided to give that pike a whirl. So I hired out and they sent me to Manitowoc, Wis., for daytime work.

When I reached Manitowoc the old fellow I was to relieve decided he didn't want relief. In fact, he refused to break me in on the job. Maybe they were trying to fire him but he insisted on staying and did what he could to scare off relief ops. I've heard since of telegraphers pulling that trick at other places, making the work appear terribly tough to a new comer. As a rule, in such cases, the nervous brass pounder calls the chief, tells him he doesn't want the assignment, and leaves the incumbent unmolested. Anyhow, I stepped out.

Going over to Fond du Lac, I visited with the C&NW boys there. When I mentioned that I was temporarily a man of leisure, the op on duty called the chief, who then gave me a wire pass to Chicago. The brother arranged for me to sleep in the parlor car of a layover train there and agreed to awaken me at three a.m. so I could catch a train for Chi. Now operators, who can't afford to forget such things as train orders, are prone to overlook lesser matters. This fellow forgot to wake me up. I thought I was sunk, but the day man fixed things, with the result that I landed a job just out of Milwaukee yard.

My office was a shack about seven miles from the main depot, where they were building a cutoff. I had to catch a switch engine at 6:30 every morning, down through the yards to work. The job wasn't very desirable, to say the least, and maybe I lost some of my customary good nature.

Especially the morning I got into an argument over the telephone with Trainmaster Kelly about the location of a switch engine. The more he said the madder I got.

A boomer once told me: "If they ask you too many questions anywhere you work, tell 'em you ain't a dispatcher, just an op." I thought it was a snappy comeback. That retort came into my mind and I gave it to Kelly. No sooner had the words come out of my mouth than I realized I'd said the wrong thing. Soon after, much to my satisfaction, I was sent to Rockfield.

Second trick was my dish at Rockfield, a fine little town about twenty miles north of Milwaukee. Dense timber stood on each side of the track, regular primeval forest. I can hear the echoes yet, as the six p.m. fast Number 216 sounded her whistle while approaching the station through the woods.

Construction work was going on. Gravel trains ran back and forth, hauling loads from a pit at Kewaskum, about twenty miles away. Sometimes one of them would show up right ahead of hotshot Number 209, almost on the fast train's running time.

If I knew 209 was ten minutes late I'd give them a highball, hoop 'em up a note and they would race in front of the flyer to Jackson, the next station. Then when I OS'ed 'em to the dispatcher I'd set the time back a little to make it look all right. That was risky railroading, but I was still immature enough to think it was smart stuff.

Another thing I'd do. When I had a 31 order I would sign it for the conductor before he came in and have it ready for him to save delay. Two skippers, Knapp and De Loy, had been running gravel trains through Rockfield. On a certain occasion a ballast drag pulled in and stopped with the head end at the water tank. Looking out, I saw the engine Knapp had been using, so I sent Knapp's name to DS. The detainer snapped back, "Who signed that order?"

I knew then that something was wrong. I told him that I had recognized Knapp's engine and had signed the orders so as to hurry them on their way.

"It may be Knapp's engine and Knapp's engineer, too," said the dispatcher, "but the conductor is running the train. That's De Loy, not Knapp. You better cut out that sort of thing."

I was scared, but DS didn't turn me in. After that I never signed an order to the dispatcher until the conductor had put his name on it.

THE Rockfield tavern-keeper had the concession for pumping water to keep the engine water tank filled. Being a busy man he asked me to take over and paid me eighteen dollars a month for firing up and pumping about three hours every second day. It was easy money. Besides, it enabled me to bathe in the pump-house, with plenty of hot water. That was only one of many angles of the railroad game I wouldn't have learned about if I had stayed in one place.

The fall of 1911 rolled around. I had put in two years as a wandering brass pounder but had not worked any tower jobs. It was time to change. I hit the Lake Shore & Michigan Southern. Needing towermen, they sent me to Otis, Ind., to break in. When the LS&MS broke you in, you could just about work any tower. I was taught how to read a tower diagram and movement chart, a lot about plant mechanism, and how to hustle out and disconnect rails and spike switches quickly. After three days, I was passed okay and ordered to WR tower at La Porte to work the third trick.

Most towers along the line were duplicates of the Otis setup. There was a standard grouping for signal levers. In a twenty-eight lever plant, the eastbound levers would be 1 to 4 and the westbound ones 25 to 28. When I reported for work the first night I noted the twenty-eight levers, same as at Otis, and anticipated no difficulty.

Instead of studying my plant chart, I visited with the second-trick man, a bad case of overconfidence on my part. He was a boomer, too. We swapped yarns until

HERE I was the bigshot

he went home. Then I looked over the tower, getting acquainted, but still failed to analyze the chart.

I walked around the glassed-in walls, gazing down on twinkling patterns of light and track network. It seemed to me that this was the most romantic job of all, controlling the movement of all trains that passed through my plant. Here I was the bigshot. I could keep 'em rolling on the main, stop 'em, or head 'em in. They had to go where the signals told them to and I was the bozo who set the signals. When you get to feeling cocksure like that, look out. There's trouble ahead!

I hadn't been on duty long before it came. A special train was trying for a speed record between Elkhart and Chicago. Scorching gravel eastward, they had passed through Mishawaka, South Bend and Rolling Prairie. The next tower was WR, La Porte. A headlight showed in the distance, racing toward me through the night.

Ordinarily, lever 1 is the eastbound home signal; but at La Porte, for some reason, the arrangement was different. Lever 27 took the place of 1 in the lineup. Many towers, including mine, were kept dimly lighted so as not to interfere with the vision of an oncoming engineer. However, I felt too certain of myself to think of dim lights. The flying train drew closer. After lining the derails, I reached over and pulled what I believed was lever 28.

"Sure was all ready for that baby," I told myself—but I had pulled 27. My east was clear, my west at stop!

Soon I heard an angry engine whistle. I saw sparks fly from wheels the full length of the train. In another minute they came to a stop at the home signal.

Then, for the first time, I looked up at the chart and saw what had happened. I had stopped the speed-boy by pulling a red signal instead of a green. At that moment I shrank so small that I could have crawled into the inkwell. However, mitigating factors saved my job. I was a new man and had not been posted about the unusual set-up nor warned of the coming hotshot. Thus I learned another wrinkle of the railroad business: never line up for a train in a strange interlocking tower without first studying the chart.

(To be continued)

Southern Comfort, L & N Brand

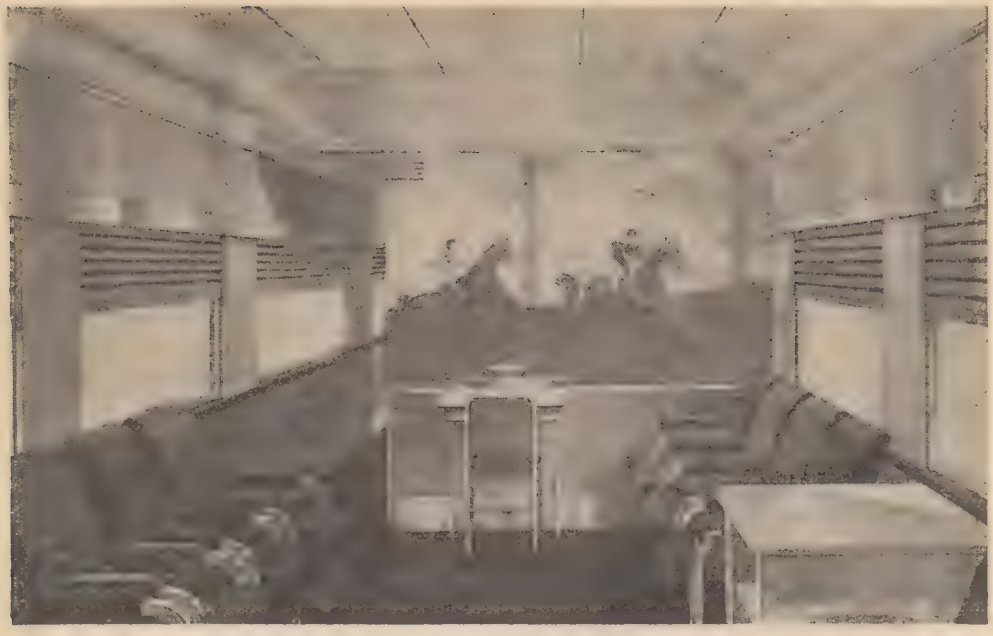
ABOVE: Switch panel for car's fluorescent lights and air-conditioning control

RIGHT: Spacious men's lounge with deep-cushioned sofa

BOAST of the L&N, four new streamliners—the St. Louis-Atlanta *Georgians* and Cincinnati-New Orleans *Humming Birds*—are luxury comfort at coach cost. Color, murals and special lighting offer passenger eye appeal; while the latest in mechanical equipment guarantees easy ridability. Keynote of the South's new-earned prosperity, trains slice almost five hours from former running time.

HUMMING BIRD coach, one of twenty constructed by ACF's St. Charles shops in time for November 17th inaugural. Both ends have sheet rubber enclosures which form continued surfaces between coupled cars

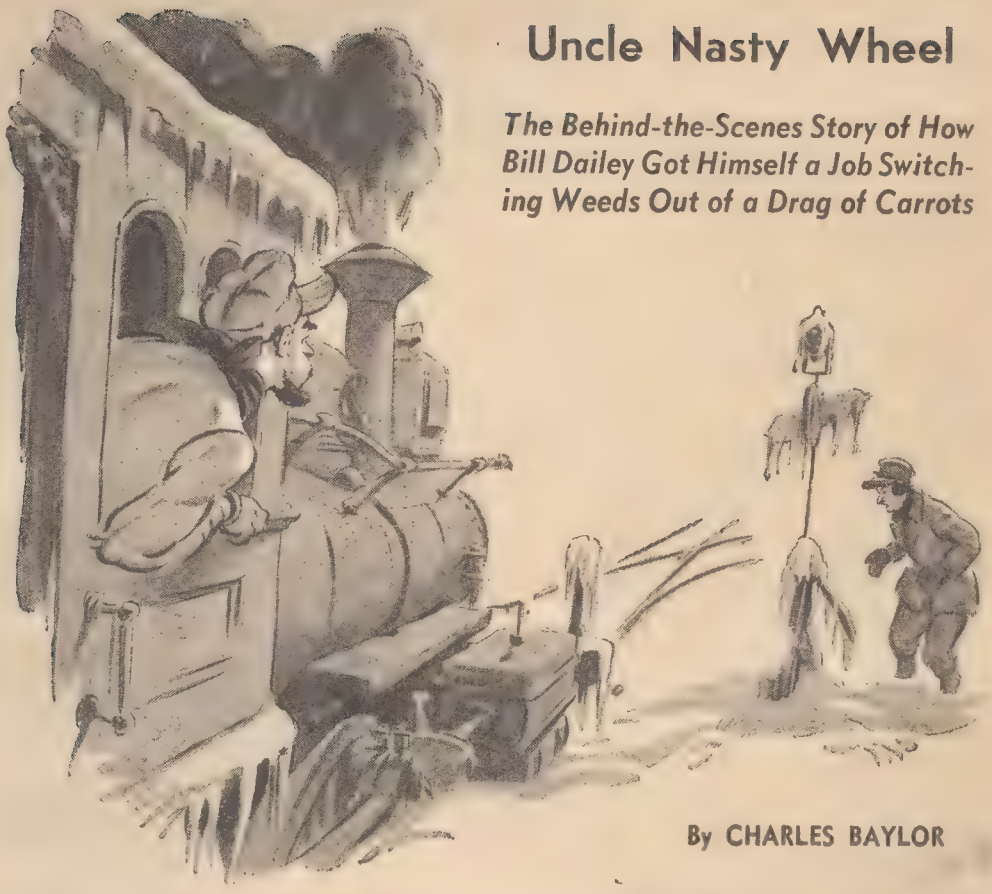
INSIDE royal blue and silver coach: reclining and revolving seats, individual lights, heating units, ashtrays and arm rests. Murals on bulkheads portray L&N scenery



TAVERN ON WHEELS. Lineup of passengers seeking liquid refreshment forms at lounge end of combination car, with seated capacity of twenty-eight. ***Below:*** Full house in 85-foot coach, all chairs reserved. Overhead baggage racks supplement storage space at either end

Uncle Nasty Wheel

The Behind-the-Scenes Story of How Bill Dailey Got Himself a Job Switching Weeds Out of a Drag of Carrots



By CHARLES BAYLOR

NOW my wife tells me there is just plain no excuse for anyone to repeat such a yarn as Old Bill Dailey told down at the yard office the other day. And at first I was more or less inclined to agree with her. Perhaps it isn't a topic fit for yarn-spinning. But, you know, the more I get to mulling it around in my head, the more chuckles I get.

The more I think about it, the more I am convinced that if it isn't exactly a mauve decade drawing-room tale, it is a typical legend of a great class of vanishing Americans; the old hard-fisted railroaders of the hand-fired steam engine era; and for that reason worth telling. And when you see what a stir this little story made in our town, why, maybe you'll agree with me.

I was down at the P & O yard office last Saturday afternoon, which is not an unusual place to find me. Being a small railtown doctor, I am obliged to be somewhere near a telephone. And because the yard office in our town is the place where there is most always something going on, I make it my sparetime resting place.

You might even say, as my wife often does, that it is my "outer office". It is the place in our town where the old pensioners collect to recall the "good old days", while the small fry, would-be railroaders in knee pants, hang on every word. And I might add, a place where a lot of

grown-up non-railroaders in town hang out, wishing like the dickens they hadn't listened to their folks when they were kids and had gone railroading anyway.

Well, when I got down to the yard office last Saturday afternoon there wasn't much doing. Old Bill Dailey, the retired engineer, and a handful of the town's youngsters were there. The place was real quiet. With a short exchange of greetings, I took my place on the bench against the wall opposite Old Bill, and lit my pipe.

Old Bill wasn't ready to talk yet. He just sat there chewing tobacco while the small fry, knowing when to keep quiet, looked on and wished another old timer would come in so the arm-chair railroading would begin. And as it turned out, they didn't have long to wait.

In the door stomped big, hulking Jesse Widener, another of our town's old engineers, puffing and blowing and berating Old Bill for not stopping for him on his way down.

"If I'd 'a' knowed you was comin', you old coot," Jesse blustered, "I'd 'a' coupled in with you and we coulda double-headed on down here!"

"Yeah, I know," answered Old Bill dryly, "and I seen you all right when I passed your house. That old pizen-puss of a housekeeper of yourn had you out in the yard switchin' the weeds out of a drag of carrots! Didn't figger to bother you," he added. "By jeepers, Jesse, why ain't you man enough to pull the pin on that tarnal woman?" he exploded.

"Well," Jesse was unperturbed, "fer one reason, I know doggone well you been wantin' to hire her fer her cookin', which I am in a mind to appreciate myself. You've done everythin' short of marryin' her to get her; and you'da done that only she wouldn't have no part of you, bein' a self-respectin' woman."

Well, of course, that brought a howl of glee from everybody there. It was no secret that Sarah Johnson, Jesse's housekeeper, and Old Bill would have been married two years past, if Old Bill hadn't been so stubborn about refusing to quit chewing tobacco. She'd been Old Bill's housekeeper before that; but she went to work for Jesse right after the break-up. And it was right about that time Jesse Widener gave up chewing tobacco, assuring everybody that it didn't agree with his new store teeth. "Well, sir," Old Bill spoke up when the laughter had subsided enough so he could be heard, "I guess folks here in town never did rightly understand why I was so dead set against givin' up chewin', and I never did offer no explanation at the time because I didn't want folks to think I was makin' up excuses. But I guess I can out with it now.

"It's just that I felt I would be desecratin' the memory of my own old Uncle 'Nasty Wheel,' who's been dead these past forty years. If you got time to set and hear about him, mebbe you'll be willin' to agree that I only acted accordin' to my bounden duty."

This was what we had been waiting for. You bet we had time "to set and hear about him!"

WELL, SIR, first off, Nasty Wheel Dailey was my uncle. Not many folks around these parts would know of him, because he run a engine down on the old Tuscaloosie Railroad a good many years ago. But you can bet back in those days everybody that was anybody for miles around knew or had heard of Nasty Wheel Dailey.

He was at the same time the slickest throttle-handler on the Tuscaloosie and the undisputed champeen of chewin' terbaccer 'spectorators in them parts and times.

"I call to mind that Jesse here had a purty good reputation 'long them lines, when we was younger fellers. But, of course, he was just a amachoor compared to my old Uncle Nasty Wheel; and Jesse has since give up the art.

"Now my uncle got his nickname of Nasty Wheel as a young feller. That was long before I was born. Seems like he set some kind of a speed record with one of them old wood-burnin', slide-valve high wheelers down there and everybody 'lowed he'd turned a mighty nasty wheel. And the 'Nasty Wheel' part of it stuck.

"So there you are. A kinder hearted, more willin' feller you'd never hope to meet. Raised me from a pup, Uncle Nasty Wheel did. You see I was just a kid when my folks up and died, and old Uncle Nasty Wheel, who'd allus kept bachelor's quarters, took me in and raised me the best he knew how.

"Well, sir, to get to the point, as the feller says, Uncle Nasty Wheel was a chewin' man. In fact, I 'low he was the chewinist man there ever was before or since them times. There wasn't a wakin' minute of the day that Uncle Nasty Wheel wasn't chewin'. Always set a deal of store by the medicinal and disinfectin' qualities of chewin' terbaccer, he did. But mostly he just took more downright pleasure out of chewin' than any man I ever heard tell about.

"But then, Uncle Nasty Wheel never did chew any ordinary kind of terbaccer, 'ceptin' maybe when he was just a kid startin' out. No siree, Uncle Nasty Wheel mixed up his own right at home. Now there are all kinds of chewin' terbaccer, as any conosewer will tell you quick enough. And most any feller that chews is partial to one kind or another, and just can't abide by any other flavor.

"There's some fellers that holds with a sweet chew; a terbaccer that is plumb loaded with brown sugar, molasses and likkerish. But as any man that chews can tell you, this kind of chew makes for a deal of 'spectoratin'. Then there's the cigar clippins' and plain terbaccer. There's a deal more holds with this kind of chewin', it bein' more popular with the ladies, quite dry and not causin' a excess of sprayin' of the surroundin's. Then there's the hot chew: unsweetened, peppered, paprikaed, and downright scaldin'. It was this kinda terbaccer, which calls for just a middlin' of 'spectoratin', that Uncle Nasty Wheel first started chewin'.

"But that was when he was just a ganglin' kid, firin' them old engines with three-foot lengths of pitch pine, that Uncle Nasty Wheel was chewin' that *ordinary* hot terbaccer. As time went on, and he got his full growth, he begun to add a speck of red pepper and mebbe a mite of ground mustard seed to the original brand. Had a taste for the heat in his terbaccer, Uncle Nasty Wheel did. He kept 'sperimentin' and addin' this'n that 'till he got his own hotter'n Hades brand of chewin' developed.

"Yessir, by the time Uncle Nasty Wheel was in his prime and drawin' the best trains on the Tuscaloosie, he had him a regular terbaccer mixin' room in the woodshed. He never would let me help him with that mixin' though, so the recipe for that special mixture of his'n died right along with him.

"I'll never forget the smells in that shed. There was dried mustard seed, red pepper and grated horeradish that I could recognize, and a lot of other stuff that I never did know the names of. And always there was a stack of cases of *Little Mare* chewin' terbaccer, which was the hottest kind sold them days. Uncle Nasty Wheel used three to four papers of that terbaccer a day, besides what he mixed into it!

"Mister, you can believe me that terbaccer mixture was absolutely pizenous to anybody but my uncle. Hot as brimstone it was. Why there was folks them days said he dosed it with sulphuric acid and cyanide; but I never did find any in the mixin' shed and I don't hold with that kind of exaggeratin'. Nossir, the facts are there, and they themselves is amazin' enough to make any stretchin' unnecessary.

"Yep, there's a parcel of smart young fellers runnin' around at the fairs nowadays, guzzlin' fish hooks and razor blades and such, but they are just plain sissy stomachs compared to my old uncle.

"Uncle Nasty Wheel was follered in relays for twelve hours by members of the Boilermaker's Local; and though he used four papers of his special mixture, none ever caught him 'spectoratin' the cud! You see, there was a deal of speculatin' those days as to whether Uncle Nasty Wheel just wore them chews down to a nothin' or done away with them in some unknown manner. But when the money was down between the two schools of thought, Uncle Nasty Wheel wouldn't let go. He 'lowed as it was a perfessional secret, and he couldn't jepperdize his standin' in the art by lettin' it out.

"Yessir, he had quite a reputation, Uncle Nasty Wheel did. But it wasn't just his type of chewin' terbaccer that done it. In them days it wouldn't have brought him more than just a passin' notoriety. It was his downright uncanny accuracy as a 'spectorator that made Uncle Nasty Wheel famous back in them days.

NOW ANY expert can tell you there are three classes of 'spectorators, and it is a matter of some argument whether any one class has much got the edge on the other. First, there's the lip-puckerin' kind that depends entirely on the lips for drawin' a bead and the tongue muscles for motive power. Jesse, here, was a purty slick operator as a lip-puckerin' 'spectorator in his day; but he has no doubt lost his fine touch by now.

"Then there's the 'tween-the-teeth class of 'spectorators. The 'tween-the-teether is a feller who has a downright big mess of luck mixed into his 'spectoratin' ability. His teeth has to be so placed by Mother Nature, or mebbe displaced by some feller's fist, as to allow him to make the most of it in his art. But the 'tween-the-teether is just another tongue-power man, and a tongue-power 'spectorator ain't never much for distance!

"No interruptions here, Jesse! You ain't hardly what might be called an authority any more!

"Now to get back to my story, the best for power or distance is the blower or pneumatic 'spectorator. He depends on his lungs which gives him a lot of pressure, but unfortunate as it may be, he ain't never got much control. Fact is, he sometimes breaks into a downright sprayer, which, it goes without sayin', is no kind of a feller to have around.

"Now my Uncle Nasty Wheel weren't no ordinary lip-puckerin' kind of a 'spectorator. Nor was he what you might say was an out-and-out 'tween-the-teether. Like all real geniuses, he had a style all of his own.

"It's kinda hard to describe, but it was just a sorta twinkle of a pucker, kinda on the left downward corner, with maybe just a mite of tongue pushin'. But it was mainly, and for the most part, pneumatic. And it was high-speed, accurate and had real hittin' power. Yessir, Uncle Nasty Wheel was a downright calculator. He figgered windage by instinct, adjusted his aim to suit and never missed.

"I've heard lots of reliable folks down there tell that Uncle Nasty Wheel made a pile of winnin's in contests as a young man, but, of course, that was before my time. It was a rough country back in those days and there were a lot of teamsters who, aside from not gettin' along well with the railroaders for business reasons, felt they was the cleverest 'spectorators in the business. Well, Uncle Nasty Wheel, he just took them all on. He give them odds, and out-'spectorated the whole kit and kaboodle 'til they couldn't get nobody to lay money against him.

"Now there are folks, 'specially in these times, as will tell you there ain't no sense nor earthly use for such an accomplishment as my Uncle Nasty Wheel's. But don't you believe them! If you'll hear me out, I can show you where Uncle Nasty Wheel was the most valuable man the Tuscaloosie ever had.

"To begin with, he was right handy to have around the railroad in cold weather. Why shucks, with his aim and special mixture of terbaccer, he could thaw a frozen switch lock with no more than a squirt from where he sat in the cab. I call to mind one night when I was a boy we had a 'specially cold spell follerin' right on a bad sleet storm. Well, sir, every switch on the ladder tracks at both ends of the yard was froze so bad they couldn't break them loose. Things was at a standstill in the yards until they come and hauled my Uncle Nasty Wheel outa bed.

"I ain't sayin' it didn't take him a deal of chompin', and in the case of some switches an extry squirt or two; but he had that whole doggone yard unfroze in an hour's time. Yep, he was plumb tuckered afterwards, I'll admit, but that ain't unnatural considerin' the size of the job that he done. The officials of the Tuscaloosie never forgot that favor or a dozen others like it that my Uncle Nasty Wheel done for them.

TO SHOW you just how much them people that run the Tuscaloosie back in them days thought of my Uncle Nasty Wheel, they actually changed the current of traffic on their double-track road so's not to have to embarrass Uncle Nasty Wheel by askin' him not to 'spectorate on their rails!

"It seems that originally their south track was the westbound and the north track the eastbound. That meant the engineer was always ridin' the side of the engine next to the other track. When the supervisor of track traced an excessive amount of pitted rails to Uncle Nasty Wheel's chewin' terbaccer, the company just changed the flow of traffic around so that the engineer's side of the engine would always be the outside of the two sets of rails!

"We'd never of found out the rea-

son for that change if it hadn't been for the Western Union Company. You see, they owned the telegraph poles along the Tuscaloosie right-of-way; and as soon as they heard about the change, they come down to make a call on Uncle Nasty Wheel. Havin' heard about the rails gettin' pitted, they knew doggone well that not even the creosote on them pine poles would stand up under Uncle Nasty Wheel's squirtin'.

"Well, of course, when they asked Uncle Nasty Wheel as a special favor not to use the poles as targets, he was glad to oblige, and answered them to the effect that he would aim at the cinders from then on where it wouldn't do no harm. He even offered them his services for nothin' anytime that they migh feel in need of a man with his special abilities.

"Well, sir, them Western Union people was that pleased they gave Uncle Nasty Wheel a card sayin' he was entitled to free use of their telegram service for the rest of his days. That was real nice of them considerin' they never knew old Uncle Nasty Wheel couldn't have wrote a telegram, even if he'd 'a' knew somebody that could read one. Yet all them accomplishments, which had gone before, wasn't nothin' compared to the job of work which got my Uncle Nasty Wheel's picture in all the papers in the country a half a century ago.

"I remember the day well. It was the Fourth of July, 1896, and you can check the records of the Tuscaloosie Railroad Company any time and see it wrote down in black and white. It was a hot, summery day and Uncle Nasty Wheel and me had gone down to the depot to see the special go through. Folks in town had been talkin' about nothin' but the special for over a week. Seems like the Tuscaloosie arranged a special picnic excursion out of Philadelphia up to Lake Tuscaloosie for the Fourth of July. They'd been sellin' tickets for a month ahead of time, advertisin' the fact that the new engine *William Penn* would make the run with eight new steel underframe coaches of the latest design and most modern appointments.

"Well, course, folks back there in Toutsville, where we lived was mighty anxious to see the new engine and coaches. To get to Lake Tuscaloosie, she'd have to swing off the main line and come up through our town on the single-track branch to the lake. Naturally, the special wasn't goin' to make no stop at Toutsville, but everybody figgered on seein' her go through and they was all down to the depot.

"Well, sir, it was just a few minutes ahead of train time when my Uncle Nasty Wheel and me went inside to ask old Dave the telegrapher how the special stood. He said he hadn't heard anything, so he reckoned she was on time. But bein' an obligin' feller, he tickered back up to the next station gettin' the word that she was right on the hammer.

"That meant she'd be goin' through in somethin' less than a couple of minutes, so Uncle Nasty Wheel and me went back onto the platform and edged up to the front of the crowd where we could get a good view of the Tuscaloosie's new train when she whizzed through. First thing we heard was the whistle. A few seconds later she come whippin' around the curve bearin' down on the depot at a fifty-mile-an-hour clip.

"She sure was a beautiful sight! All brass and green paint, she was, and the biggest engine we'd seen in

them times. She roared through the station with a couple of whistle blasts to answer our highballs; and slidin' along behind her, as slick and smooth as you please, was eight brand-new, shiny cars full of folks all dressed to go picnicin', all laughin' and wavin' and havin' a fine time.

"Well, sir, it happened just as the observation car was swingin' by the platform. Seems like it all happened at once! The first inklin' I had of it was when I heard Uncle Nasty Wheel let out a terrible powerful whoosh of 'spectoration, that even drowned out the thunder of the special! Next thing we knew there was the grindin' of brake shoes and the train was pullin' to a stop down the track, like the engineer had thrown the brake valve into the big hole.

"Naturally, we all went a' runnin' down the track after her. And there she stood. Uncle Nasty Wheel had hit the brake pipe on the observation car, square between the platform and the angle cock. The air hose and about four inches of brake pipe was hangin' by a little thread of metal which hadn't broke; but the damage to that brake pipe was enough to let the air out of that train line, just as if an emergency application had been made!

UNCLE Nasty Wheel had saved the lives of every soul on that train. Old Dave, the telegrapher, had got a message to hold the special, just as she was goin' through. It was too late to flag her. But Uncle Nasty Wheel had spotted old Dave comin' out of that wire office hell-bent-for-'lection with a red flag; and he'd knowed right off something was wrong. Uncle Nasty Wheel acted without askin' questions. He drawed a bead on that brake pipe, give her all he had, and made a high power hit. Folks that was ridin' that car claimed it actually rocked them some!

"Well, as soon as the train had stopped, the flagmen went ahead and back with flags and we wasn't long in seein' what a great disaster my Uncle Nasty Wheel had prevented. Headin' down from Lake Tuscaloosie come a coal drag that would have connected with the special in the worst cornfield meet in history. Seems like the new boomer operator up at Tuscaloosie Lake had let that coal train get by him without puttin' him in the sidin for the special. Realizin' his mistake too late, he had wired old Dave at Toutsville, set all his boards on the red and disappeared from Tuscaloosie forever.

"Well, sir, you can bet my Uncle Nasty Wheel was some hero. The whole doggone nation read about his remarkable feat of 'spectoratin'. They even wanted him to make a speech down to Philadelphia; but that was plumb impossible at the time.

"You see, Uncle Nasty Wheel had put so much effort into stoppin' the special that he had not only throwed his jaw out of location complete, but he had also strained all the liggerments in his tongue. Why he couldn't hardly eat, let alone talk. Fact is, he gargled for three weeks with horse linnermint before he got his tongue back into any kind of 'spectoratin' shape at all.

"Yep, Uncle Nasty Wheel made a name for himself that'll never be forgot around the Tuscaloosie country, and I think you can see now why I am so doggone partial to his memory. Yessir, he was a great man, my Uncle Nasty Wheel, and it was a tarnal shame that he was taken off in the

prime of life like he was by a little old rattlesnake."

"But," piped up one of the town's quick-witted urchins, "I thought that your Uncle Nasty Wheel always had his chewin' with him durin' his wakin' hours. How is it he didn't give that old snake a squirt of his special mixture, Bill?"

"Well, sonny," said Old Bill, and there were genuine tears in his eyes and he never so much as cast a glance at Jesse Widener, "it was that dog-gone woman he took to wife, after I left him to come up here on the P & O. She was a right pert gal, and mebbe I shouldn't blame her too much. They told me afterwards she cried a bucketful, when they found old Nasty Wheel out in the garden wearin 'a gingham apron. He'd been switchin' a few weeds out of a drag of carrots. They said she felt particular bad when they found him like that, bein' as it was her that made Uncle Nasty Wheel give up chewin' for to marry her.

"However, she perked up real smart when she found Uncle Nasty Wheel's life savin's. It was all tied up in

THE first inkling I had was when Uncle Nasty Wheel let out a powerful whoosh of 'spectoration . . .

neat bundles of fifty single dollar bills, and each bundle wrapped slick as you please in a old *Little Mare* chewin' terbaccer package."

THE STORY was over. Nobody talked much for a few minutes. Finally Jesse Widener said he reckoned it was time for him to get on home. He started toward the door, turned, and said to Old Bill:

"Say, Bill, reckon you could give me the loan of a chew of terbaccer 'til I can git a package? All this here talkin' kinda got me hankerin' for a chew again." His face was red as a beet.

"Keep the package, it's most gone and I got another," said Old Bill, acting as if it were the most natural thing in the world.

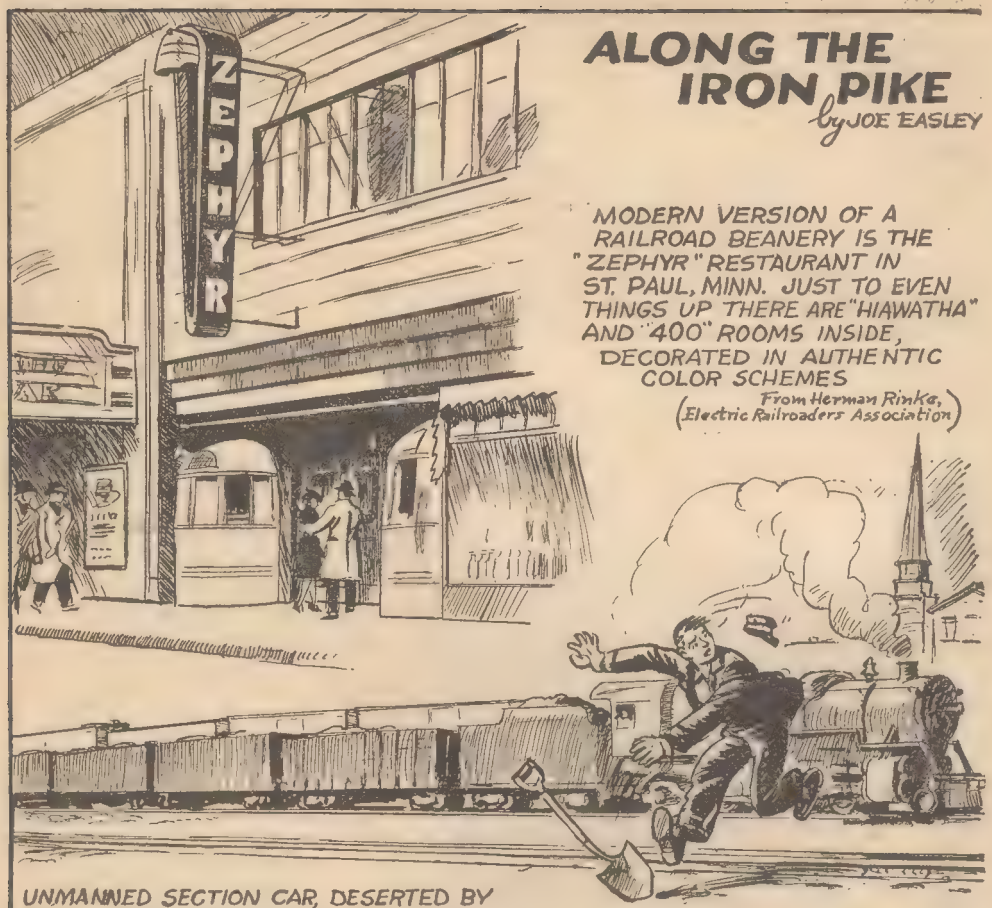
Jesse mumbled his thanks and left stumbling over the door sill as he loaded his mouth. Nobody laughed, either.

I didn't get to church the next day because that Olson woman had to pick a perfect Sunday morning to have the new little brakeman that Tim is bragging about. But you can bet I got the news when I got home!

It seems that the first time anybody knew that Sarah Johnson had quit Jesse was when Old Bill Dailey showed up at church with her hanging on his arm. Bill wasn't chewing either. It was the first time anybody ever seen him with a cigar in his mouth, although they admitted you couldn't say he was smoking because it wasn't lit. But he was looking proud as punch and swinging that old cigar from one side of his mouth to the other, clamping down on it pretty hard whenever it came to rest.

ALONG THE IRON PIKE

by JOE EASLEY



MODERN VERSION OF A RAILROAD BEANERY IS THE "ZEPHYR" RESTAURANT IN ST. PAUL, MINN. JUST TO EVEN THINGS UP THERE ARE "HIAWATHA" AND "400" ROOMS INSIDE, DECORATED IN AUTHENTIC COLOR SCHEMES

From Herman Rinke, (Electric Railroaders Association)

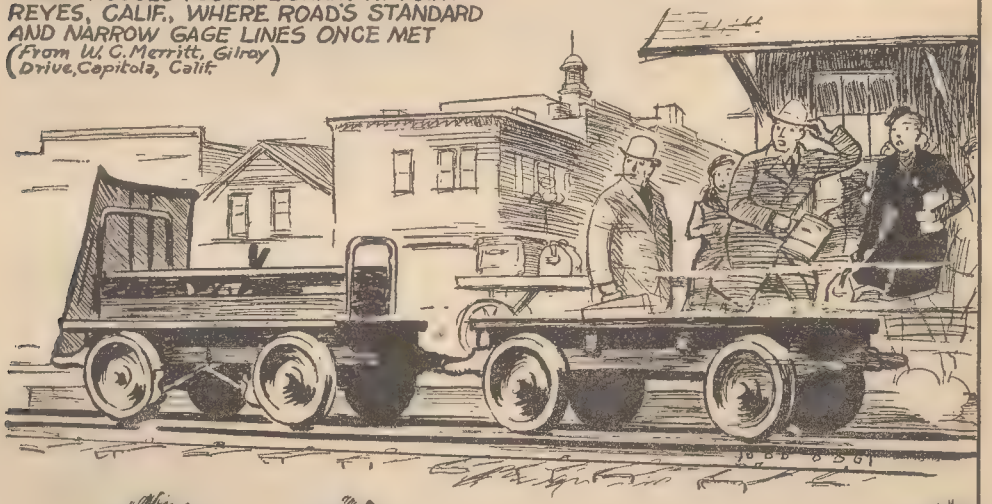
UNMANNED SECTION CAR, DESERTED BY CREW WHEN CENTRAL VERMONT FLIER THREATENED TO OVERTAKE IT, SPED SWIFTLY UP THE MAINLINE REGENTLY, ASTONISHING PASSENGERS WAITING TO ENTRAIN AT THREE STATIONS. A BARRICADE OF TIES ENDED ITS RUN ABRUPTLY AT ST. ALBANS, VT.

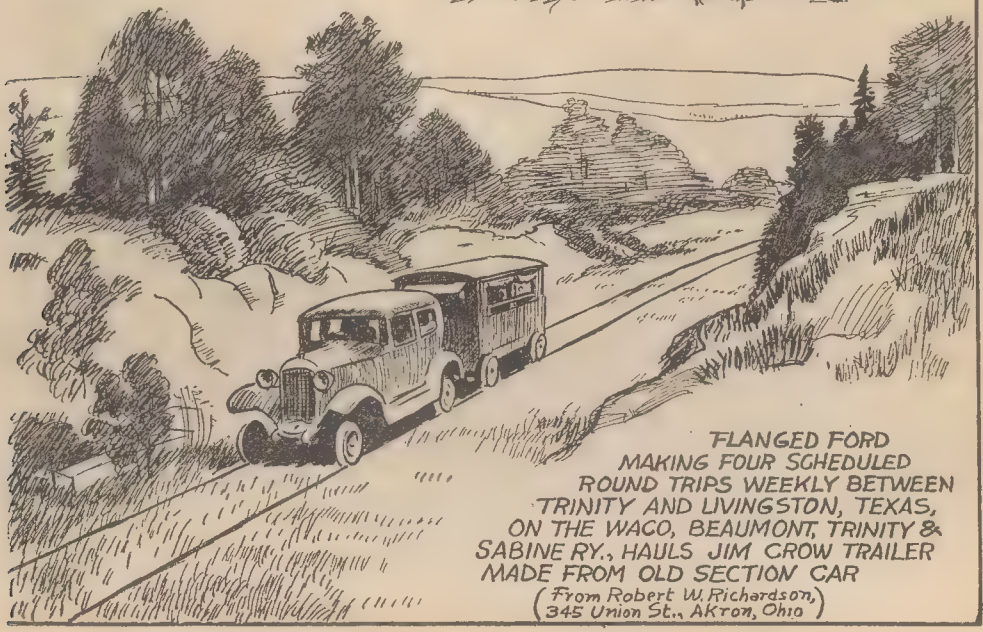
(From S.L. McNally, 40 Blodgett St., Burlington, Vt.)

WHO KNOWS WHAT HAPPENED TO AUTO? BACK IN THE EARLY TWENTIES THIS CAR AND CPR PASSENGER TRAIN LEFT PLACE VIGER STATION AT MONTREAL IN RACE TO QUEBEC CITY. ENGINEER FLAVIEN ROULEAU NEVER SAW HER AGAIN

(From Engineer Alfred Rouleau, and CPR Staff Bulletin)

OLD NORTH WESTERN PACIFIC COACH HOUSES PUBLIC LIBRARY AT POINT REYES, CALIF., WHERE ROAD'S STANDARD AND NARROW GAGE LINES ONCE MET
(From W. C. Merritt, Gilroy Drive, Capitola, Calif.)





FLANGED FORD MAKING FOUR SCHEDULED ROUND TRIPS WEEKLY BETWEEN TRINITY AND LIVINGSTON, TEXAS, ON THE WACO, BEAUMONT, TRINITY & SABINE RY., HAULS JIM CROW TRAILER MADE FROM OLD SECTION CAR
(From Robert W. Richardson, 345 Union St., Akron, Ohio)

Light of the Lantern

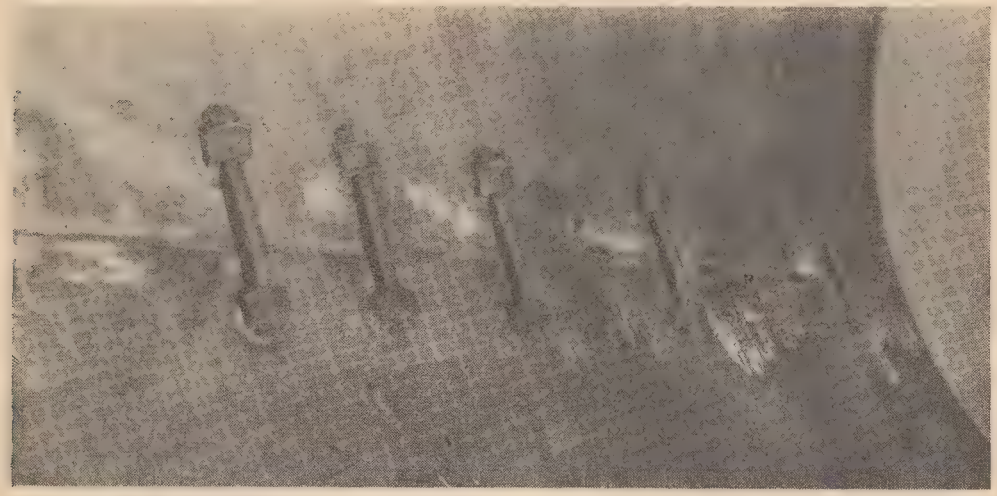
Welded Boilers

THE all-welded boiler has at last been accepted by the railroad industry and given a benevolent pat on its backhead by the I. C. C. This new and significant development climaxes nine years of experimental operation of a welded boiler outshopped by ALCO in 1937 for a Delaware & Hudson Consolidation. All that time, tests on the installation have been conducted under ICC supervision. The boiler has been completely free of leaks during this period and the welded seams are still in perfect condition.

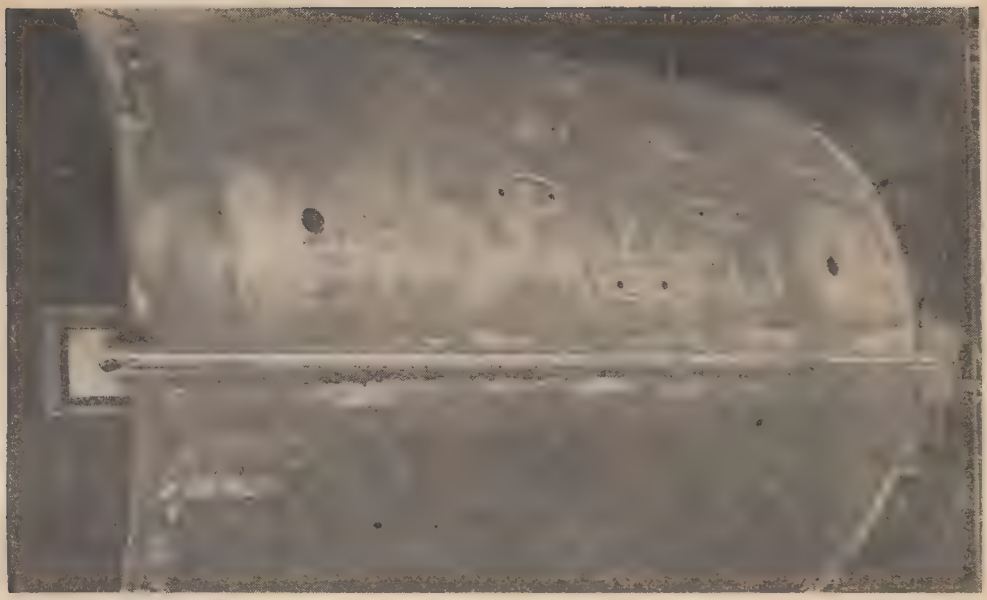
R. B. McColl, ALCO President, says that the new manufacturing facilities permit the company to build any size locomotive boiler.

All inspections will be by X-ray apparatus which greatly speeds up detection of flaws in metal. The use of welded locomotive boilers will greatly reduce boiler maintenance costs in road shops and will also cut down the time that locomotives are laid up. With properly welded seams, seepage is impossible.

Before the initial boiler was installed for road service in 1937, it was set up as a stationary boiler and operated for six weeks. Then it was mounted on a locomotive and examined every three months for the first year, with special attention given to its welded seams. This



NO LAPPING HERE. Edges of boiler seams are brought to a butt joint by fit-up bolts and surface-ground for cleanliness before being welded



COMPLETED longitudinal seam on first boiler course is a masterpiece of precise welding. Note starting tab at left and test plate at right

HUGE GRINDERS put bevel on edge of boiler course, preparatory to fit-ups for girth seam

procedure was repeated during the second year. Since then the boiler has been examined annually throughout the period of the tests, and seams are still in perfect condition.

Among the advantages of welded boilers are the elimination of riveted joints which sometimes permit seepage between boiler plates, even when best fabricating techniques are employed. Boiler leaks are eliminated by welded boilers, removing the possibility of cracked sheets. The smooth contour of the welded boiler permits an easier application of the boiler lagging and jacket, and provides an equally smooth interior surface.

The saving of weight in the welded design over the riveted one is an important item. Depending upon the type and size of the locomotive, this may vary between three to six thousand pounds for the boiler alone.

The accompanying illustrations, showing various stages in the construction of an unusually large barrel for a Delaware & Hudson

ABOVE: Second boiler course on positioning rolls, with steam dome ready for welding. BELOW: Dome connection has been completed

4-6-6-6, give a comprehensive idea of the problems involved. After the sheets have been rolled in a conventional manner and brought together, all edges are ground to form V-shaped grooves, after which they are heated and filled with welding compound. Heat is first applied to a block of metal clamped adjacent to the seam to prevent the severe initial application from marring the uniformity of the weld, which is then carried the length of the seam and extended on across two sections of groove-butted metal beyond. This gives the laboratory a sample section of the union for testing. Because adjacent metal may be weakened by the intense heat, the entire boiler is placed in a furnace after completion, heated to a dull red color and allowed to "normalize," or cool slowly, over a period of days. Pressures as high or higher than those used in riveted boilers are considered safe with the new construction method.

BOILER on positioning rolls for final closing weld between back-end and third course. Special adapter ring on back-head supports barrel during rotation. This unit was applied to D&H articulated engine shown on page 66

ENTIRE BOILER has now been mounted on the stress-relieving car and will be wheeled into a huge oven for heating to a dull red color. Next it must be cooled slowly over a period of several days. This process, known as "normalizing," leaves a molecular structure which is uniform throughout the steel

Coming next month: Delaware & Hudson . . . . By William H. Rohde

THE INFORMATION BOOTH

Each month the Lantern Department prints answers to rail questions of general interest, submitted by our readers. We do not send replies by mail.

1

RECENTLY I saw several of the Rio Grande's 3800 Class 4-6-6-4s stored in the Salt Lake Shops. Why are these comparatively new engines not in service?

The locomotives in question were *Union Pacific Challengers* which were reallocated to the Rio Grande at the time of their completion, because of the greater need for them on that road. Six in number, they were built for the Defense Plant Corporation in 1943. The D&RGW has had them under lease since that time, primarily to increase their power on the west end of the system to handle the Geneva steel plant business. At the present time, the Rio Grande having sufficient power of types better suited to its kind of operation, has terminated the lease. While the 3800's served well during the latter part of the war, they are not suitable for operation east of Grand Junction. The Defense Plant Corporation has inspected the stored engines but has not as yet advised the Rio Grande as to what disposition they will make of them.

2

GIVE the schedule of the Nickel Plate's overnight freight between Cleveland and Chicago.

Last summer the NKP inaugurated the *Overnight Special* which leaves Chicago at 7:30 p. m., and arrived at Cleveland, three hundred and forty miles away, at 7:30 a. m. The westward schedule calls for a 6:15 departure from Cleveland, with arrival in Chicago at 7:00 a. m. Cars close at both Chicago and Cleveland at 5:00 p. m. The *Overnight Special* replaces a similar train which was discontinued during the war.

3

CAN you publish a description of the new Fairbanks Morse Diesel-electric of the Kansas City Southern? I have heard that this is the world's largest Diesel.

This eight thousand horsepower loco-

BELOW: 8000 Fairbanks Morse horses in a city-block-long stable

motive is composed of four sections (two A and two B units), each having two thousand horsepower. Both end units may be used as control cabs, depending on the direction of the train. Over-all length of the four sections is two hundred and fifty-nine feet, four inches, and the total weight with supplies is approximately six hundred and twenty-five tons.

4

SUPPLY information on the New York Central's hot-box alarm.

A newly perfected hot-box alarm, developed by the Central's Equipment Engineering Department, with the assistance of Magnus Metal Corporation and Timken Roller Bearing Company, guards against overheating axle journals and will be installed on new passenger cars and locomotives. Six-thousand horsepower Niagara-type engines, the latest motive power acquired by the NYC, were delivered equipped on all axle bearings with the alarm. More than thirty-five-thousand bearings, on high-speed load equipment of the road, will be so furnished. The device, consisting of two cylinders which release a cloud of smoke and a penetrating odor at a predetermined temperature, calls attention by sight or smell to an overheating axle journal so that the train can be stopped before trouble develops.

ABOVE: Walkie-talkie on the PRR. This new "carry phone" will be a great boon to a swing brakeman on an icy night. He can carry his lanterns in his teeth, and a bundle of track torpedoes and flares inside his cap. But it's good to be able to let the wife know you'll be home for chow

Photo from L. B. Ulrich, P.O. Box 29, Sheffield, Mass.

STUDY in steel and shadow: Pittsfield-to-New York afternoon express at Konkapot Bridge, Ashley Falls, Mass., on New Haven's beautiful Berkshire Division, once the Housatonic R.R.

5

WHAT is the horsepower rating of the new electric engines recently built in this country for the Paulista Railway of Brazil.

The eighteen streamlined passenger locomotives which General Electric has built at its Erie, Pennsylvania, plant have the largest continuous rating—4050 horsepower—of any single-cab, direct-current machines ever built in the United States. Each unit weighs one hundred and eighty-two tons and is capable of maintaining a speed of ninety miles an hour.

6

HOW long are the tunnels on the Illinois Central's Edgewood cut-off freight line?

Tunnel Number One is eight hundred, Tunnel Number Two 6900 and Tunnel Number Three 2600 feet long. The first two are in Pope County, while Number Three is in Johnson County, northeast of Grantsburg, Illinois. Located on the Illinois Central's Southern Illinois & Kentucky Railroad, better known as the Edgewood cut-off, the tunnels were completed in 1927.

7

FURNISH data on New Haven Railroad drawbridge operations.

The NYNH&H has the dubious distinction of having more drawbridges per mile of line than any other Class I carrier in the country. There are nineteen draw spans on all the New Haven lines and the New York to Boston Shore Line is afflicted with twelve of them. On summer Fridays, generally the railroad's busiest days, there is likely to be a very heavy traffic of pleasure craft going from upstream moorings to open water. On Sunday, another busy railroad day, the ships are generally returning home, and again the draws get little rest. In 1945 the New Haven had to open its twelve Shore Line bridges a total of 17,847 times. The total number of openings of all drawbridges on the system was 32,856. Buzzards Bay span led with 4883 openings during the course of the year.

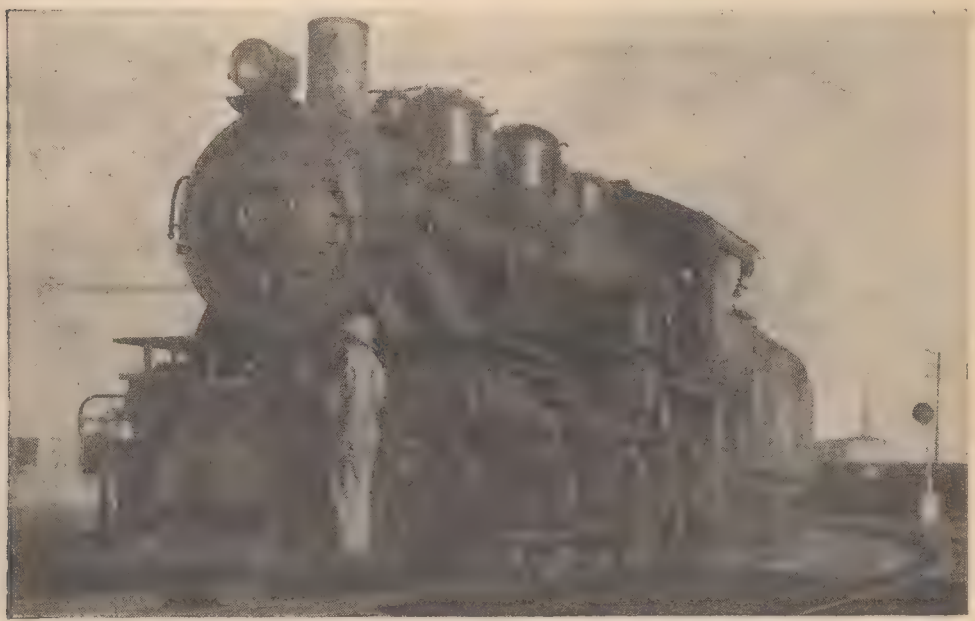


Photo by H. L. Kelso, Box 4846 Florence Blvd., Los Angeles, Calif.

SANTA FE goat 824 backs into Los Angeles Union Station for a cut of cars

8

LIST new government surplus rolling stock recently acquired by the Alaska Railroad.

The Alaska Railroad has received twenty Diesel-electric locomotives, three-hundred troop cars, thirty-six tank cars and fifty kitchen cars.

9

RECENTLY I saw a forty-foot automobile box car marked S G Ry 1600 on the Jersey Central. I looked it up in the Equipment Register *and found it to be the only box car owned by the South Georgia Railway. Please furnish data on that line.*

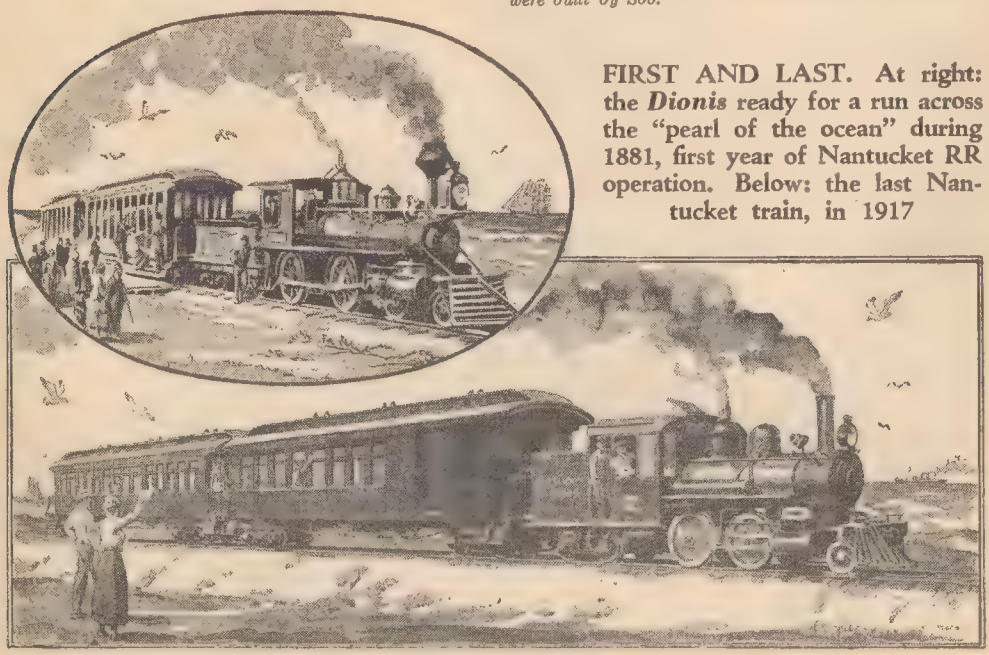
Incorporated in Georgia, March 6, 1896, as the South Georgia Railway, a portion of the property was opened for traffic in 1897, and the remainder in October, 1901. Additional extensions were placed in operation in 1904. The company formerly leased the West Coast Railway, but in 1924 that property was merged. South Georgia trackage consists of seventy-seven and one-half miles of main line, of which thirty-seven miles are in Georgia, and forty in Florida. In addition there are over eleven and one-half miles of side track. Main line terminals are Adel, Georgia, and Perry, Florida. Standard gage, the road is laid with fifty-six pound rail. Equipment consists of three locomotives and one motor car; two passenger cars; one box car; three flat cars; two camp cars; and a caboose.

10

COMPARE specifications of the Rock Island, Soo Line and Wabash Mountain types.

	Rock Island	Rock Island	Soo*	Wabash
Class	49	49-A to G	N-20	M-1
Numbers	4000-4001	4002-4061	4000-4020	2800-2824
Cylinders	28x28	28x28	27x30	27x32
Drivers	69	74	69	70
Pressure	185	200	200	245
Weight	333,100	364,000-378,000	344,500	406,400
T F.	50,028	50,430	53,900	69,400
Booster	.....	.....	10,720	.....
Builder	Alco	Alco	Dunkirk	Baldwin
Date	1913	1920-29	1928	1930

**Soo Line Nos. 4010-4017 weigh 342,000 lbs., were built by Schenectady; Nos. 4018-4020 weigh 338,700 lbs., were built by Soo.*



FIRST AND LAST. At right: the *Dionis* ready for a run across the "pearl of the ocean" during 1881, first year of Nantucket RR operation. Below: the last Nantucket train, in 1917

New Publications

Trains, Tracks and Travel, T. W. Van Metre. Simmons-Boardman Publishing Co., 308 Church St., N. Y. City. 423 pages. $3.50.

SEVENTH Edition of Professor Van Metre's complete study of American railroading amply justifies the publishers' quick follow-up on the Sixth Edition, which was issued only two years ago. In the interim, new operating methods, adaptations of military technique in railroading, the phenomenal inroads of the Diesel as a freight hauler, the successful introduction of the steam turbine locomotive and the new science of electronics—all have transformed many aspects of the rail industry. Professor Van Metre has incorporated this new information without sacrificing the simplicity and directness which in his former editions appealed to rail hobbyists of all types and ages.

Innumerable new half-tones, including a photo-sequence of locomotive types, bring the illustrative material up to date. The index is easy to follow and at the same time sufficiently detailed. Whether or not a reader has seen the former editions, he will find this one engaging and informative.

The Pioneer Period of European Railroads, a tribute to Mr. Thomas W. Streeter, 71 pages, Harvard Business School, Boston, Mass., 50c

Compiled from the material on non-American railroads collected and presented by Mr. Streeter to the Baker Library, this brochure contains a comparative study of rail development in England, France and the United States. Of the three countries, England made and kept the most complete records and has since produced the ablest economic historians; and, in consequence, bulks largest in Professor Arthur L. Dunham's study. In spite of vast dissimilarities in geography, population and traffic needs, American roads in general developed according to the English pattern. The marked contrast to this pattern offered by the emerging French lines, even where circumstances of geography and trade were very similar to those obtaining in England, provides a provocative glimpse of government subsidy versus private capital in operation.

The final pages of the brochure provide a sort of bibliography of the early European railroad items, listed according to date, which comprise Mr. Streeter's gift to the Harvard College Library.

CANNEL CARRIER, The Kentucky Engineer, University of Kentucky, Lexington, Ky., 50c.

FOURTH in a series of brief histories of Kentucky abandoned railroads, Elmer Sulzer's *Ohio & Kentucky* article leaves nothing in factual material to be desired. Integrated with the history of this 27-mile roadway—which went from prosperity to poverty in 35 years of operation—are incidents of feuding, wrecks and ambitious plans, typical of a line running through a hilly coal region untapped by larger systems. Productivity of the cannel mines was the gage of its traffic; when this failed, the road was abandoned.

This illustrated feature is included in the University's regular quarterly magazine.

Oliphant's Earning Power of Railroads, 556 pages, Jas. H. Oliphant & Co., 61 Broadway, N. Y., $5.

The 41st edition of this standard reference manual contains financial data on all the important railroads in the United States. The Tables give vital statistics of capitalization, mileage, earnings, tonnage, etc., in a form permitting easy comparison, while the extensive Notes cover information of interest to the rail historian or investor. In addition, the introductory chapters contain illuminating information on the theories behind the overall financial set-up of modern railroads.

P-1 ENGINES are regularly assigned to heavy night trains between St. Louis and Detroit and to fast St. Louis-Moberly, Mo., varnish

Locomotive of the Month:

Wabash 4-6-4

MODERN in every respect, from semi-solid cast steel pilot with retractable couplers and one-piece engine beds to disc-centered drivers cross-balanced for minimum hammer-blow, Wabash engines of the P-1 Class give no hint of the fact that they were once lumbering three-cylinder Mikados. Built as the road's K-5 Class by Alco in 1925, they were pulled out of service during depression years, at which time changes in operating practice rendered them obsolete. The boilers, however, had generous steaming capacity and in 1943 it was decided to rebuild the five 2-8-2s into high-speed, dual-service engines. Painted deep blue with aluminum bands on their running board aprons, they are singularly distinctive in appearance.

Specifications:

Class	P-1	K-5
Type	4-6-4	2-8-2
Numbers	700-704	2600-2604
Cylinders	26x28	23x32 (2) 23x28 (1)
Pressure	220	210
Drivers	80	64
Grate Area	70.9	70.9
Wt. on Drivers	196,390	251,215
Wt., Engine	374,680	340,490
Tractive Force	44,244	67,869
Tender Capacity		
Coal	16	18
Water	12,000	10,000

HUDSON 703 has been equipped with experimental wind vanes

Student Fireman

Pages Out of the Past, When Rails Faced Problems Unknown in Present Practice

WHEN Master Mechanic S. T. Parks hired me for the Santa Fe at Winslow he told me I would have to make trips as a student fireman until I received an okay from the engineers I rode with; then my name would be put on the firemen's roster. I was fortunate in being sent out on my first trip with Engineer Tom Blackwood and Fireman Johnny Brennan. Both of them took the trouble to give me good advice and real help, and their efforts to educate me in a fireman's duties are a pleasant remembrance to me. Upon our return to Winslow a few days later I was called to fire a water train, for the reason that

SWEARING he would show the scissorbills how to make a coupling, the Old Man grabbed a lamp

no one else was available, and I made no more student trips.

A few years later in January 1905, Tom Blackwood was killed at Williams in an accident that could hardly happen in present day practise. The switchstands of that period had red and white lights at night and a special rule in the timecard stated that "a first class train becoming ten or more minutes late on its schedule must approach a yard of the first class under control, prepared to stop within the limit of vision and expecting to find the main line occupied by other trains. In the event of accident the responsibility will rest with the approaching first class train." Tom was killed on the "log run" between Williams and Chalender. He had reported for 6 a.m. According to rule he checked his watch at the telegraph office at 6:15. The operator, Frank Savage, told him that Number 10, due at 6 a.m., had left Ash Fork forty minutes late, and Tom replied that he would back his engine, the 779, through the siding to the west end and if Number 10 was not showing he might come out on the main line to back in on the mill track about four hundred feet farther west where some cars for the log run were standing.

By ARTHUR B. REARDON

Arriving at the west end and not seeing any sign of Number 10 he backed out on the frog and stopped. The head brakeman dropped out of one gangway to throw the switch, and the fireman put a red lantern on the back of the tank, a duty he had neglected before leaving the roundhouse track. When they got on the ground they both heard Number 10 coming down the hill and yelled to Tom to jump. But Tom hadn't a chance. The crash drove his train about 125 feet back into the siding and turned it over. The engine on Number 10, the 1017, overturned the other way and the wreckage was strewn over five tracks. Her fireman was fatally scalded. Some hours later Tom's mangled body was dug from under the coal when the tank of the 779 was righted.

Guy Mapes, the engineer on Number 10, had had trouble with his electric headlight after leaving Seligman and it failed completely after leaving Ash Fork. As he came down the hill rounding the curve through the woods about a mile west of Williams, he could see nothing but white lights. Everything looked clear. So releasing his brakes, he hit the 779 at forty miles an hour.

The first electric headlights in our district made their appearance about 1903 on some passenger engines. They were arc lights—the present bulb equipment had not been developed—and some of us got rather severe shocks when adjusting them. Since there were frequent failures, many preferred a good oil light in spite of the trouble we often had in getting them going. It was a fairly common practise in those days to light a kerosene lamp while running at perhaps thirty miles an hour. An oldtimer would climb up the step on the left side of the smokebox, open the cage door and slide the lamp part way out to raise the chimney. Then he'd put two or three discarded train orders inside, taking care that they rested on the wick and reached above the top of the chimney. After pushing the lamp back in place and latching the door, he would slide the armhole cover at the back of the cage open. With a match in his hand he would put his arm in far enough to strike the match and light the train orders. They in turn would burn down and light the wick. All this was done as he stood on the narrow iron step, hanging on with one hand, the blasting of the stack within a foot or two of his ears. Sounds simple? Occasionally the chimney would break, which meant a trip over the narrow running board to the cab for a spare one and the job to do all over again.

Then, as now, we were limited to a slim allowance of lubricating oils. Valve oil for use in the steam chests and cylinders was issued in quarter pint units, depending on the mileage to be made, and was especially precious to the engine crews. We had many clever schemes to wangle extra oil from the storeroom keepers but unfortunately for us they seldom worked. On one trip when I was firing for Frank Goldsworthy, I spied several cars of farm machinery in our train. When we pulled into a siding to meet some opposing trains I hopefully walked back to see if by chance any oil was in the shipment. To my great joy a barrel of valve oil and one of engine oil showed up and I hurried to tell Goldie. After the opposing trains were gone, the brakeman cut our engine from the train, we came out on the main line and backed alongside the car with the oil on it. All hands got busy; those barrels were heavy, but eventually they were up on the back of our tank covered with coal. In some way the story leaked out, for several months later when I wanted to lay off a trip or two, I complained of a backache and Uncle Bill Daze, our travelling engineer, asked me if I had possibly strained it lifting oil barrels. Aside from that, we heard no more about it.

I've mentioned being called for a water train on my first trip firing. In those days the supply of water was a very serious and expensive problem. During a large part of the year the springs supplying the roadside tanks would be dry or at least inadequate. The result was that trains of tank cars were run from points where water was ample to those that were dry. Clear Creek, a few miles east of Winslow,

was an unfailing source and at times water trains out of Winslow were a daily necessity. All of the water in this country is strongly alkaline and boilers were washed out every few round trips. Even so, heavy scale deposits on the tubes and sheets were inevitable and this caused many engine failures on the road.

Old timers will recall the "rattler" alongside the old roundhouse at Winslow. This was a cylinder made of boilerplate, mounted on end bearings and driven by a belt and pulley from inside the roundhouse. When the flues were removed from a boiler they were put in the rattler and tumbled around, banging against each other until the scale was knocked or ground off. The din from this machine could be heard all over town. In later years chemical treatment of the water reduced its alkalinity and the scale troubles and road failures were cut down but this treatment was also costly. Today the Diesels which are used to the practical exclusion of steam engnies over the 450 miles between Winslow and Barstow use distilled water in the cooling systems, and leaking flues and water trains are but memories.

Practically all our freight trains were hauled by two engines. Thirty to thirty-five loads made a heavy train, a far cry from the 3500-ton trains hauled by Diesels at more than double our average speed. We were limited to 24 miles an hour in freight service, but down some of the hills where the curves were not too sharp the lads would take the bridle off and let them roll. One such incident when I was firing for Goldie on an orange train comes to my mind.

Eastbound as an extra, we left Flagstaff about twenty minutes later than the time the conductor had registered us out—that was a quaint custom quite prevalent in those days. It was decided to go to Angell to meet Number 3 and let Number 2 pass us. This meant that we actually had about forty minutes to travel close to 25 miles and get in the clear. Nothing unusual about this except that unknown to the engine crews Uncle Bill Daze, the travelling engineer, had boarded our caboose at Flagstaff.

After the first five or six miles of level track the grade was all downhill except for a short hump just east of Winona, and we drifted along at forty to fifty miles an hour to our meet as planned. After Number 3 had left Angell and we were waiting for Number 2 to pass, Uncle Bill came walking down to where both engine crews were sitting on a tie pile near the engines. Any hopes we had that he had come west on Number 3 were quickly dispelled as he proceeded to read the riot act to Goldie and Shorty Young, the engineer on our second engine. When he got through they called his attention to the fact that had they made the meet at Winona, the next siding west of Angell and the point where Number 3 and Number 2 were scheduled to meet, it would have meant sawing both trains by and a delay to each of them of perhaps thirty minutes, and much more than that to our train of redball freight. Uncle Bill replied that there was a card in each engine cab with the speed limit on it and no good reason to ignore it.

As I remember him he was a past master of sarcasm and he managed to include both firemen in his remarks. He rode our engine in to Winslow and I'm sure every rule in the book and timecard was religiously observed. We heard no more of this, but that was Uncle Bill's custom; if he caught a man in a not too flagrant violation of the rules that man was always told in very explicit language how useless he was to the railroad and the world in general, but seldom did he turn him in for further discipline. In October 1929 Mr. Daze was retired on pension; he died three weeks later after a lifelong service to the railroad.

IN the summer of 1903 I was running the night switch engine at Winslow. Most of the time I had the 2178, an old Santa Fe Pacific ten wheeler with a diamond stack. I was not a promoted engineer but at that time firemen considered to have had enough experience for the job

usually ran the goats. The pride I took in the fact that I was at the throttle of an engine was exceeded only by my ignorance. The switchmen were boomers, who as a rule knew all the tricks of their trade and I quickly learned a lot from them, not always to my advantage. We would hustle to get our work done by midnight and then go on the spot until time to make up the morning way freight. This three or four hours of loafing time was usually spent in sleeping or sitting around the yard shanty where I would listen with open mouth to the varied tales those boomers told, tales that covered most of the trackage west of Bangor, Maine.

Oldtimers will recall the friction that was prevalent between the snakes and the road crews and also that the latter usually slept and ate in their cabooses. I was with a crew that took a delight in working the caboose track. When it came time to put a caboose on an outgoing train it was their custom to take them all out on the ladder track. Here they would cut off and kick the one they needed on its train, being sure to kick it hard enough to make the coupling. The chorus of yells and curses at this rough handling by the awakened trainmen was music in the switchmen's ears and on a few occasions led to fist fights. One conductor on the west end, Jim Dunn, was noted among the switchmen for his vocabulary and temper and if his caboose was in town the snakes made sure it was kicked around.

I have in my possession the first train order I ever handled on my own. It is dated July 9, 1903, order Number 2, complete given at 12:50 a.m., and reads as follows: "To C. and E. Engine 2178. Engine 2178 will run extra Winslow to Moqui and return with right over all trains. I.L.H." Frequently the despatcher would send a switch engine to Moqui, the first siding west of Winslow to fill the water barrels there, the only supply for the operator and section crew at that station. This was done when it was not feasible for the way freight to make the trip. On one occasion the foreman of the crew (we did not call them conductors) was a boomer named Ford, who thought it would be a good idea to have a caboose on the trip. In accordance with this we coupled to Dunn's hack and took it along. All was quiet until we stopped at the water barrels after our seven mile run. Then Dunn came out in a towering rage and after a brisk exchange of personalities he cooled down somewhat, but not before he threatened to shoot the whole crew if his caboose was kicked around again. The switchmen took him seriously and I do not recall that the car was ever thrown around after that.

Number 2 was due out of Winslow at that time at 10:30 p.m. One night when this train was running a couple of hours late, Supt. Hibbard's business car was scheduled to go out on the rear. Ford gave us warning to handle the car carefully as the Old Man was probably in bed. We were doing our best but the switchmen could not make the coupling to the rear Pullman. After they had made several attempts, sawing back and forth without success, Mr. Hibbard suddenly burst forth from the rear door with his night shirt tucked in his trousers and a pair of slippers on. Grabbing a lamp from one of the crew he said he would "show you scissorbills how to make a coupling without tying a train up half the night."

After several vain attempts, opening one knuckle and closing the other and vice versa, he let out a roar that must have awakened any still sleeping passengers in the Pullman and signalled me back about ten feet. Yelling "Hit it!" he gave me a highball and I banged them together so hard the engine bell rang. The coupling made on this try and without a word the Old Man set the lantern down and clambered into his car.

A minute later the conductor of Number 2, "Old Redhot" Frost sauntered back to ask in a rather bored voice if they thought they were putting a caboose on the train. This relieved the tension somewhat and if Mr. Hibbard heard the switchmen's comments he kept a discreet silence.

Winslow was a dry and dusty little hamlet, most of it on the north side of the tracks. A few mesquite trees, no paved streets nor street lights and aside from the saloons but few places for recreation. We did have occasional dances and entertainments run by the railroad Brotherhoods and fraternal orders, but gambling was the most popular pastime for many of us.

The company maintained a reading room just west of the old station on the south side of the tracks and at the east end of the yard. It was equipped with a few pool and card tables and here it was that I was initiated into the mysteries of inside straights and stud poker under the tutelage of Jess Hohn, Bill Phillips, O. A. Brown and Dave Parker, to mention but a few. As the reading room was company property, gambling was not permitted—but we did not play for marbles.

In this connection I remember an incident concerning Jess Hohn, who is now a retired engineer but had then been promoted but a short time. He and his brother Lou, also a young runner, were both newlyweds and their wives often compared the monthly paychecks of the two men. On one of these occasions Jess seemed to have earned twenty dollars less than Lou, although they both made about the same mileage. Jess mournfully explained that he had been very unlucky that month—had been hauling empty cars nearly every trip while his more fortunate brother had been handling redball loads. As a matter of fact, Jess did have some hard luck, but in a poker game.

In the winter months traffic on the road was at its peak and doubling the road was a common occurrence. No legislation existed that limited in any way the hours a crew might work and an eight hour rest at either terminal was almost unthought of. With single track, frequent trains and bad weather, long waits in sidings were inevitable and these waits often provided us with much needed sleep. Some of the sidings were manned as temporary train order offices during the rush periods. A boxcar with the trucks removed, or set in on a spur, provided the living quarters and office space for the operators. These men were usually boomers working for a stake or green hams who could give a despatcher handling an overcrowded division plenty of headaches.

One stormy night I was firing the 780 for Jim Nance, doubleheading an orange train east from Seligman with running orders to Winslow. On our arrival at Riordan, two thirds of our trip covered, we found the order board against us. The operator gave us a message from the despatcher directing Nance to cut out of the train and run back light to Williams, about 25 miles west. The grade from Riordan to Winslow, about 64 miles, was mostly level or descending and it was sometimes the practise when eastbound traffic was heaviest and power was scarce, to cut one engine out at this point and run it westbound light to Seligman. This was always vigorously protested by the unlucky engine crew and this night Nance done himself proud. Jim claimed the boiler was in dire need of a washout, with several flues leaking and the rods ready to fall off the drivers.

For a few minutes as I watched the messages pass between Jim and Barney Moran, the dispatcher, I thought we would go through with our train, but as so often happened with those arguments, the dispatcher won. The head brakeman cut us off from our train and backed us in the siding where we watched our train pass us for home. Coming out on the main line and backing to the operator's boxcar office, we got an order to run extra to Williams with right over Number 2, which was running several hours late.

It was snowing heavily and rather than sweep out switches to turn on the wye at Bellemont, six miles west, we decided to back all the way. Our cab curtains gave us some protection from the storm and the prospect of a hot meal at Williams made the trip more bearable. There was no Harvey House there then but a very fair restaurant near the depot. On our arrival we put our engine in the siding. After a hearty meal, Jim registered our

arrival at the depot telegraph office. It was still snowing heavily, Number 2 was somewhere on the climb up Supai Mountain and our orders were to doublehead them, when they showed up, to Winslow. After getting water and coal we came out on the main line and stopped east of the coal chute to clear Number 2's engine when they came in.

By this time we had been working twelve or fourteen hours and a warm engine cab on a stormy night is an ideal spot for a cold tired crew to fall asleep. My next recollection is hearing Charley Woods who was pulling Number 2 whistling us back to couple on the 494. How long we had slept I do not know, possibly two hours, but I can still see that fire as I got down from my seatbox and Jim backed to make the hitch.

All gray ashes except for the patches of dull red fire, each perhaps a foot in diameter. These patches were my only salvation—if I could build a fire from them we might be able to save a session in Mr. Hibbard's office. Jim got down from his seatbox to see the condition of the fire. Shaking his head he told me he would delay our departure as much as possible, getting orders and testing the air brakes, and for me to do my best to get some fire burning in the back of the firebox so the draft would get the coal in front of it burning.

Probably not more than five minutes passed before we pulled out and I am sure we did not have as much as 140 pounds pressure. It was still snowing and plenty had fallen since we had broken through it coming from Riordan. The first three miles or so were up a stiff grade through rock cuts with hard hills beyond and as Jim opened the throttle my steam dropped. I doubt very much if the 780 much more than moved herself up through the cuts.

Our main worry was whether or not we could hold our air pressure up enough to keep our brakes from dragging. However, by keeping the blower on and putting coal only where needed we managed to have a fair fire by the time we got up to Red Cut at the top of the first hard pull, although the water was too low for comfort. Going up the last hard pull from Bellemont to Riordan we gained enough to have some on the back of the crownsheet before we tipped over the summit for the drop down to Flagstaff. Charley Woods and his fireman knew we were fighting for steam, but I'm sure they had no idea of how hard we fought to keep off a delay report. I have wondered if Number 2 would not have fared as well that night had the despatcher not had the unhappy thought of doubleheading them with the 780.

MY respect for the oldtime dispatcher increases as the years pass. The problems they had are unknown in present practise. Double tracks, phones, a rule book covering every possible situation that may arise, which ours definitely did not, and block signals to speed as well as to restrict train movement, make a great difference. Every phase of operation has changed to such an extent that I believe only those who lived through the old days can realize how great the changes are. The Diesels in use at present on the Santa Fe have completely changed the operating slant in that section of the country, but judging from the angle of a steam locomotive engineer I believe they have largely been a means of speeding the development of the steam engine to new standards of power and efficiency. This development has been constant during my experience.

The usual boiler pressures used to be 160 to 200 pounds. With the Johnson bar and heavy slide valves then in universal use pressures in excess of these resulted in engines that the average man found impossible to handle. With the advent of the balanced piston valve the picture changed and pressures were immediately increased. In 1902-3 we first saw piston valves on engines out of Winslow, carrying 220 pounds of boiler pressure. These engines were the first with wide fireboxes and with two chain swung fire doors. Some of us firemen refused to fire them, saying

we would fire one door but that an additional man would have to be carried to fire the other or there would be trouble.

However that rebellion was short lived and I do not recall that anyone lost his job over the matter. Actually these engines were easier to fire than some of our older ones ten or twelve feet long and with fireboxes between the frames. One of these new engines, the 988 I think, was put in helper service while I was firing on Supai Mountain. As we were climbing the hill on our first trip with her the old-timer with me called me over to his side and, bending down, told me not to carry over 200 as the "boiler had not been built yet that was safe to carry more than that." He lived to run one that carried 350.

The history of railroads is an ever-changing picture—they are doing the impossible every day and in the motive power field the change is as great as in any other. The 5400 horse power Diesels now in use west of Winslow are examples of the continual change. Some of us think they are the solution to the problem of efficient and cheap power. This may be true. However, the development of new designs of steam driven units may very well be a better answer, and in my opinion it is. The turbine driven condensing locomotive I was privileged to ride recently and other 6000 horse power steam driven units coming into ever increasing use, are indeed a challenge to any other form of power.

War-time necessities put the plants ordinarily devoted to building steam locomotives in the business of producing tanks, guns and other heavy machines, almost to the exclusion of their regular products. As normalcy returns the steam locomotive will come to the front as the cheapest, most efficient prime mover ever devised.

Courtesy of Canadian National

HISTORIC work train and crew posed near Fernie, B. C., back in the Nineties. Engineer of Number 363 was Ed Powers, the conductor was Ed Durkel and Ernie Raybould was fireman. Time, August 12, 1898; exact spot, mine belonging to Crow's Nest Pass Coal Co.

SNOW

It's Pretty to Look at—and White Hell for Railroad Operating Departments

Photo from H. H. Diggins, 214 Throop St., Woodstock, Ill.

FROZEN MOUNDS crackle in 18-below weather near Woodstock, Ill., as C&NW'S northbound moves after 5-day stoppage, Feb. 16, 1936. Wind velocity, 40 mph

STAFF PHOTOGRAPHER'S view of snowy meet near Meadville,

Photo from Lt. Edward N. Brewley

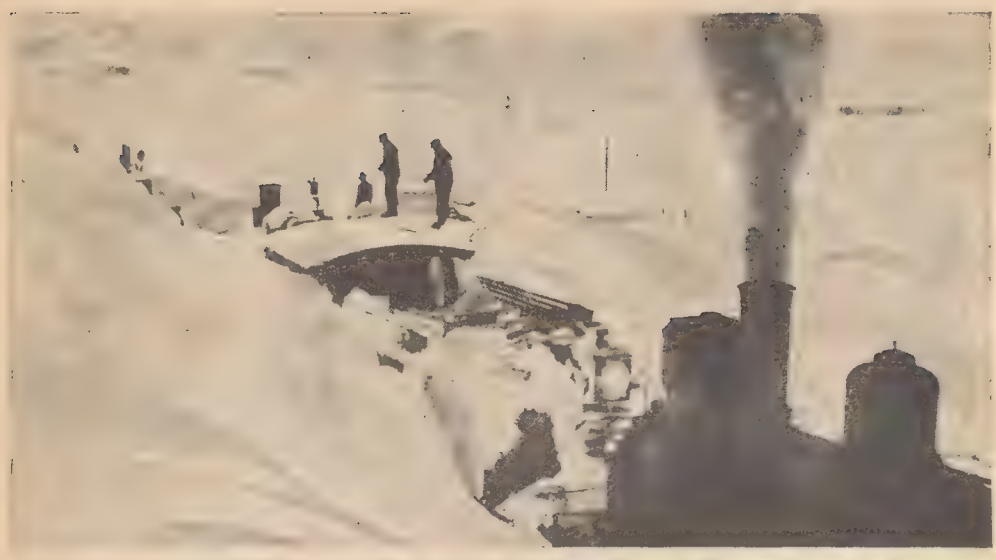
GLARING EXPANSE is shadow speckled on Bieber Line summit, Norvell, Calif., where Western Pacific's ***Ski Special*** and regular 207 meet

Pa., as two Erie passengers whistle greeting through swirling flakes

BOSTON & MAINE'S *Alouette* chuckles through her stack as she skirts frozen Merrimack River curves, enroute to Tignsboro, Mass.

BURIED to her shoulders in mountains of frozen drift, D&RGW power heaves behind the rotary plow. ***Below,*** White River Jct. earned its name the day this doubleheader pulled out of B&M yards

Photo above: Bruce Triplett, Ltchfield Park, Ariz.; below: John O'Donnell, 27 Summit, Somerville, Mass.



BLEAK SILHOUETTE of D&RG's Number 1 at Crested Butte, Colo., in January '22.

BELOW: Depth of snowdrift is plain against canting side of this Espee freight headed east across the Sierra Nevadas. Snowsheds account for the glowing headlight

PLOW TRAIN snouting her way forward on the now-abandoned Sandy River line

BELOW: Milwaukee rotary chews her way through a snow cut near Hyak, Washington. Steam power is used to prevent arcing from catenary wires overhead

Photo from G. W. Witbeck, 1803 Baltimore St., N.W., Washington, D. C.

SHALLOW SNOW where C&O's mountain-powered ***Sportsman*** bowls along toward Alexandria, Va.

Courtesy Darmer Photo Laboratory, Des Moines, Iowa

HEADLIGHT searches the tangent ahead as Grand Trunk Western freight thunders through storm near Pontiac, Mich.

Photo from Duane V. Bearse, 19645 Telbir Ave., Rocky River, O.

WESTBOUND near Cleveland's 55th Street, interurban Number 24 takes a sharp curve between poles and freight yard

Electric Lines

By STEPHEN D. MAGUIRE

Remarks and Comments on Trolleys Prosperous and Abandoned

IN RETROSPECT. Without doubt the two big events in the electric railway field during 1946 were the announcements of new equipment ordered by the Illinois Terminal RR and by the Shaker Heights Rapid Transit.

The City of Shaker Heights is spending close to one-half million dollars on the purchase of twenty-five new multiple-unit streamliners for its rapid transit line between downtown Cleveland and Shaker Heights. These cars will be built by the St. Louis Car Co., and delivery is expected late in the year. They will replace the heavy ex-Cleveland Railways equipment with which the line commenced service almost twenty years ago.

New Illinois Terminal equipment will be even more costly. The three streamlined three-car interurban trains are being built at a cost of one million dollars. They will be used in high-speed service between Peoria and St. Louis, on one of the longest interurban runs in North America.

Some other juice lines did not fare as well during 1946, and no less than thirteen companies left the field of electric traction.

For the convenience of those who have been referring to our complete listing of North American juice lines as given in *Electric Lines* for December, 1945, we are listing below those companies that are no longer juice lines. This includes electric railways changed over to buses and those that were completely Dieselized.

Company	Miles	Date Aband.	Substituted
Alabama Power Co., Tuscaloosa, Ala.	4	1945	Diesel freight
Aroostook Valley RR., Presque Isle, Me.	38	8-7-46	pass. buses, Diesel frt
Aurora, Elgin & Fox River, Elgin, Ill.	4	1945	Diesel freight
Bangor Hydro Elec., Bangor, Me.	13	12-31-45	buses
Citizens R. T. Newport News, Va.	13	1-13 46	buses
Fairmount Park Tr., Philadelphia, Pa.	9	9-9-46	buses
Grafton & Upton RR., Hopedale, Mass.	19	7-6-46	Diesel freight
Home Transit Co., New Albany, Ind.	8	2-2-46	buses
Illinois Power Co., Peoria, Ill.	40	10-2-46	buses
Mississippi Valley P.S., LaCrosse, Wis.	4	11-10-45	buses
New Albany & Louisville, New Albany, Ind.	8	12-28-45	buses
Sacramento City Lines Sacramento Calif.	26	10-14-45	buses
Salt Lake & Utah RR., Salt Lake City, Utah	97	3-1-46	abandoned
Savannah Electric Co., Savannah, Ga.	20	9-1-46	buses
Springfield Suburban Ry., Springfield, O.	5	9-1-46	Diesel freight
Tampa Electric Co., Tampa, Fla.	53	8-4-46	buses
United Traction Co., Albany, Ga.	26	8-31-46	buses
Worcester St. Ry., Worcester, Mass.	33	12-31-45	buses

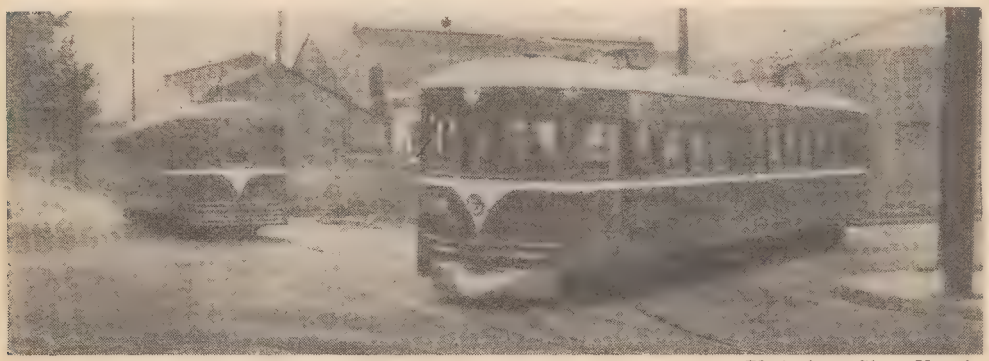


Photo from Steve Maguire

EASTON LIMITEDS, **Lehigh Valley Traction Co., passing on odd spur turnout in Easton, Pa.**

Milwaukee Journal Photo

THE MARGUERITE **used to be rented for trolley parties back in 1896. She added beauty, recalled days of *klopse* and Strauss waltzes when she rolled again in Milwaukee's Centurama parade**

WILLIAMSPORT (Md.) line of Hagerstown & Frederick will shortly be "busted," reports correspondent Samuel Z. Kuhn, 411 Guilford Ave., Hagerstown, Md.

This six-mile run, now an isolated part of the system, is the last rail line into Hagerstown, but the H&F still maintains several lines in and about Frederick, headquarters of the company. Only three cars carry on the Williamsport run, and on delivery of seven new buses on order, this service will cease.

Another expected casualty (probably to be realized by the time you read these words) is the Ephrata interurban line of the Conestoga Transportation Co.

This twenty-mile fast line, along with three city lines, is due for substitution as soon as buses ordered arrive. The city, it seems, objects to cars running into the Square, and these lines have been singled out for abandonment to eliminate their bucking one-way traffic in the opposite direction as they make their way out of the Square.

According to Pfc. Luther Cummings, Ft. Sill, Okla., these abandonments will leave only the East Belt, Seventh Ward and Rocky Springs Park lines running in Lancaster.

Chicago & West Towns Ry. will abandon the Lake St. and Madison Ave. lines that rumble into the city line from Berwyn, in the very near future, reports Tom Lesh, Maywood, Ill. Sometime before Pearl Harbor these lines were placed on the scrap list, but remained in operation. Now, it seems, the end is rapidly approaching. With the abandonment of these two routes to buses only the long LaGrange suburban will remain out of the once-extensive Chicago & West Towns Ry. system. Rolling stock on this run is kept up and track work is being maintained, so it looks as though the La Grange route may continue for some time.

RESPONSES to Comdr. E. J. Quinby's suggestion (November, *Railroad)* that the Boston & Maine operate their standard Diesels through the Hoosac Tunnel under electric power—tapped from overhead wires—registered about two to one in favor of the plan.

"To add pantagraphs, necessary devices and switches to convert a GM Diesel electric to direct electric drive," reports Harold S. Harrington, B&M Fuel Supervisor, RFD 1, Waterford, N.Y., "would cost a great deal of money; to maintain a direct current overhead wire would be another heavy expense.

"There are many things against such a system. The grade to both the east and west portals is about one percent and we draw trains of 7,000 tons. If we were to operate as proposed, it would be necessary to stop a 7000-ton train on the grade to change from Diesel to direct electric, which would be a great hazard since it would slow momentum through the tunnel at least fifty percent. As we now approach the tunnel with a tonnage train at about fifteen miles per hour and proceed through the tunnel without stopping, most trains make thirty miles per hour—the speed limit—halfway through the 24,000 feet. Hoosac is double-tracked, two-way running, protected by automatic signals and automatic train stop.

"Operation today is one hundred percent non-stop. To operate as suggested would cut half the performance, without even considering the threat of pulling out drawbars, starting the heavy trains on this grade, were the change from Diesel to straight electric made. Regarding the fans, criticized by Comdr. Quinby: these are necessary to clear the tunnel not only of smoke but of fogs, which at times are dense until fans are started."

Rudolph Vohn, 1871 Ingleside Ter. N. W., Washington 10, D. C., advises us that such a method is impossible because of the present type of Diesel construction. But Vohn has a plan of his own: "Connect into the locomotive wiring circuit two switches, one on the power transmission circuit of the engine, another on the power return circuit. These would give the engineer a choice of either direct current from the catenary or power from the Diesel generator. The return switches would be used to route the power back into the overhead circuit or the direct Diesel generator circuit.

"A 600-volt storage battery might be added as an alternative means. There could be an extra switch then so power could enter and travel direct from source to the motor or through the storage battery hooked up with the motor. If I'm wrong about these plans," adds our correspondent, "I'd like to hear any comments on them."

The difficulties that the B&M ran into with their Hoosac Tunnel electrification were enumerated by Robert A. Codman, 646 Chestnut St., Waban 68, Mass. "There were some excellent reasons why the tunnel electrification was discarded," writes Mr. Codman, "the main one being the excessive dampness of the tunnel from condensation. The electric locomotives used were the bane of the B&M's operations. So great were the power leaks through short circuits and grounds, they even affected the switch boards of the New England Tel. & Tel. Co. in North Adams, Mass. It's a well-known fact that electricity and water do not mix, and when dampness is always present, insulation sooner or later becomes only partial insulation. This was the main reason why the B&M switched to Diesels in the tunnel.

"Incidentally, while coal gas is a dangerous element, the oil burned in the Diesels does not give off any such dangerous fumes. Thus the tunnel is a lot safer than it was in the days of the steam engines."

* * *

DEATH came recently to two leaders in the electric field in Florida, reports Felix Reifschneider, Orlando, Fla. George S. Gandy, builder of the famous Gandy Bridge which connects Tampa and St. Petersburg, died at the age of ninety-five.

He had long planned to run an electric

Photo from Ernie Plant, Vancouver, B. C.

LOCOMOTIVES 9502 and 1802 on the Stave Falls branch of British Columbia Elec. Ry. *Below:* Chicagoans ride first of 600 new streamlined cars. Note non-jam automatic type window

International News Photo

line—the Florida Interurban Railway—across the bridge after its completion in 1924. But although rails were put in place and remain there today, the project was never completed.

On the day following Mr. Gandy's death, Col. Peter O. Knight died at eighty. Founder of Tampa's trolley system, he lived only a few months after the streetcars he started fifty years ago were changed to buses in the Florida city.

* * *

LARGEST electrification program of recent years has been announced by the Southern Railway of Great Britain. The scheme blueprints the complete electrification of all the company's 2,156 miles of track from the Kent Coast to Cornwall. With work slated to begin in three months, the project will cost approximately $75,000,000. Already 150 electric locomotives with a top speed of 75 m.p.h. have been ordered.

First section to be shot with juice will be the route of the luxurious London-Paris boat train, the *Golden Arrow,* which makes the run from London to Dover. All steam engines will be discarded, an expected saving of 750,000 tons of coal annually.

Freight haulage and switching will be done by 200 Diesel switchers.

TWO of the three Oklahoma Railway interurban lines were abandoned suddenly, the switch to buses effected November 7th last. The Guthrie and El Reno interurbans rolled to a halt that day, leaving only the heavily-travelled Norman interurban and two city lines in operation. When the Oklahoma Railways was sold to the Jordan Petroleum and Oklahoma Transportation companies, it was apparent that motorization was being mapped out by those in control. James Corrigan, 2605 NW, 14th St., Oklahoma City, Okla., declares that considerable opposition has arisen to any change in the Norman interurban. Many who have built homes on the rail line would be isolated should the line cease. It does not parallel the highways as closely as did the other two routes.

The *Michigan Railfan*, published by a Detroit fan group, is objecting strenuously to what they term "a deliberate effort to sabotage the rail lines in the Motor City by the bus-minded City Commission. Even though City Auditor Tobin's report shows that the trolleys are making money and the buses barely breaking even, the General Manager of the rail lines is making plans for abandonment of all except Woodward, within the next two years.

"The complete disregard of these men for recommendations of engineers who advocated the retention of rail service on the main arteries," they assert, "indicates a very determined effort to get rid of trolleys, *regardless*. In view of the intentions of the present bus-minded officials, it looks like more standing-room is in store for Detroit transit riders, most of it on a corner waiting for a bus and watching them go by loaded to the doors with the lucky patrons who live near the start of the line."

* * *

TWENTY-EIGHT inch snowfall in Denver set the bus men back on their heels, says George H. Brown, 640 Dale Ct., Denver, Colo. While only one of the fifteen rail routes was put out of service—and that one by a temporary derailment—*all* buses and trolley-bus routes stopped operating.

PCC cars never had a chance in Denver, before the change to buses was announced. Maybe the snowstorm will make the operators think twice before tearing up the rail lines. As for the interurbans of Golden, Leyden and Arvada, they operated *on time* all during the storm, when buses were completely tied up. Looks to us like the Denver changeover may be okay if they plan summer-only operation.

* * *

PLEASE list the ten longest streetcar (not interurban) runs in the United States?" asks Richard B. Rankin, RFD 1, Box 20, Whittier, Calif. Offhand, we can't give a complete answer to this question. It would seem that most of these long city runs might be found between Chicago, Ill., and Los Angeles, Calif. How about it readers. Any of you have the answer?

* * *

HISTORY of the Claremont Railway, a small New Hampshire line in the freight business in the city bearing its name, has just been published by the Connecticut Valley Chapter of NRHS. With ten pages of historical matter and illustrations, this article gives an interesting account of a small pike relatively unknown to juicefans, in spite of its prosperous freight business in these days. Copies may be obtained from Roger Borrup, Warehouse Point, Conn., at fifty cents each. Still available from Mr. Borrup are copies of the Hartford & Springfield Ry. history, at twenty-five cents each.

* * *

CALGARY, Alberta, will convert its lines to gas and trolley buses within two or three years, reports W. E. Robertson, 711 Eighth St., Wilmette, Ill. The Calgary system is extensive: the 8-mile Bowness line and the 6-mile Ogden route. Traffic is so heavy that trailer trains are run on these lines during rush hours.

"Of the ninety-two cars, only eight are modern, the rest looking like they are ready to fall apart any minute," says Mr. Robertson. A bus substitution planned before the war for the Calgary rail lines was delayed by the hostilities. First

abandonment since was the Sunalta line, on October 21st."

Edmonton, Alta. still has a few long city lines; but they, too, are condemned. The high-level Edmonton trolley bridge, pictured several years ago in *Railroad Magazine,* will probably carry the last line to be abandoned. Originally the Edmonton Radial Ry. operated an interurban line to Namao; this line however, is already gone.

* * *

MODERNIZATION plans for two extensive city lines do not bode well for the electric companies. Although approximately one-half of the systems will be retained for PCC cars, the remainder will be supplanted by a fleet of buses in both Baltimore, Md. and Kansas City, Mo.

Orville Haines, Spring Grove Hosp., Catonsville 28, Md., sends news that the plan of the National City Lines, owners of the Baltimore Transit Co., for change of seventeen lines to buses, passed the Public Service Commission. Two routes which BTC asked for substitutions on were not approved, and these two will remain rail lines together with the fourteen for which no applications were made for change to buses.

The long, suburban line to Sparrows Point, operated on private right-of-way for a long distance, was one of the two routes on which permission for change to buses was denied.

In Kansas City, the latest plans call for an eight-million-dollar modernization plan which will change all lines except eight, to buses, reports Al Hickerson (Santa Fe brakeman), 3623 Wabash, Kansas City 3, Mo.

Only bright spot in the company's plan, says Al, is the projected extension of the Troost rail line into the suburbs. No date has been set for this work, however.

* * *

TEXAS Electric's city line in Waco, has already been sold to the Waco Transit Co., reports Bob Richardson, 3030 Canton St., Dallas, Tex.

Bob says that all the local cars carry the new company herald on their sides. This change adds another name to the list of operators of electric railways in the U.S.

Bob also reports that the Dallas, Tex. city council has assented to a fare rise on the city lines, and that the company has announced the purchase of seventy PCC cars and about two hundred gas and trolley busses for extensions into suburbs and express service.

Photo from Steve Maguire

FREE RIDES on Hunter Point line of Third Avenue Transit trolleys for these Bronx, N. Y., boys is hazardous outdoor sport

Non Revenue Trip

By WILLIAM J. PARRY

THE WINTER of 1913 will long be remembered by former Grand Trunk men of the Middle Division. It was the winter of blizzards: snow fell early in the fall and stayed until spring rolled around. I was firing a Richmond Croos-Over Compound, Number 1296, out of Windsor, Canada, for Engineer John Pryor. The 1296 was a Mogul-type with a long, narrow and shallow firebox, which did not make the fireman's task any easier, with the real estate which the railroads burned in those days.

The day before I was introduced to Number 1913, Engineer Pryor and I arrived at London with manifest train Number 416, after bucking snow and icy winds for sixteen hours. I had been heaving coal through the rat-hole of the firebox until little red specks were constantly dancing before my eyes; and when a fireboy reaches that condition—well, it's time to call it a day. London had no bunkhouse then, and eating emporiums were few and far between. Not that I was particularly interested in eating. At that moment, my chief interest was in finding a nice soft mattress with clean sheets and pillows without rocks in them. So after removing the grime with a pail of hot water donated by the stationary engineer, I staggered the two blocks from the roundhouse to the hotel where Windsor men bunked, and literally fell into bed.

When I awoke after sleeping the clock around, the weather man was still doing his darndest to bury the city of London under a white blanket. I had a sneaking suspicion that all was not well on the Ontario lines. However, the most important item on the agenda was food, and what a meal the boarding-house cooks used to dish up in those days at two-bits a throw. After tossing one of those banquets down the hatch, we didn't mind plowing through knee-deep snow over to the roundhouse.

"How come we haven't been called for our regular run home?" I asked.

I still had a lot to learn about human nature, like why a perfectly healthy railroader is suddenly taken sick at the sight of a blizzard. Now I know all the answers. But it took thirty-five years of doing it the hard way.

When we barged into the register room, we were met by no less a personage than the locomotive foreman, who greeted us in a manner not usually accorded to engine crews. The boss of the roundhouse inquired solicitously of our health, and whether we had had sufficient rest which of course was the build-up for what was coming. The foreman explained as diplomatically as was possible that Sarnia Tunnel was hollering for motive power—Sarnia usually is—and our engine, the 1296, had been dispatched to Sarnia with a London crew aboard. The foreman regretted to inform us that he had no crews available, and would have to use us in snow-plow service, just as soon as a couple of "pups" could be serviced with tarpulins. We would run doubleheaded to Stratford and plow out the "cuts."

While we stood there letting the bad news sink in, the telephone on the dispatcher's desk jangled and one of those conversations, for which railroadmen are noted, ensued over the wire. The engine dispatcher was a rather dressy individual, whose name I have forgotten. But he could surely dish out valve oil with an air of disdain. Although I could not hear what the other fellow was saying, I remember hearing the dispatcher retort: "That be damned for a yarn." With this he replaced the receiver on the hook, and turned to me.

"Can you fire a passenger train?" he asked.

Could I fire a passanger train? I promptly informed the engine dispatcher that I was a Windsor man, and Windsor

men will tackle anything on wheels. The engine dispatcher appeared unimpressed by my boasting. Nevertheless, he told me to go out, climb in the cab of the 1913 and tackle Number 12 on the timecard, London to Niagara Falls eastbound varnish.

In those days, the fireman was not only a redcap for the engineer, but did a day's work without pay before leaving the roundhouse track. We had to fill both headlights, the cab lamps, lubricator and tank with oil; build up the fire without making too much smoke; and clean the boiler jacket outside the cab as well as inside. The fireman also filled the oil-feeder for the hogger. About the only thing the fireboy didn't have to do was polish the engineer's shoes.

ENGINEER O'GRADY appeared unimpressed when informed that a Windsor man was to fire for him. For some reason, Windsor men never rated very high on the Old Grand Trunk, though we took that attitude in our stride. However, as this particular trip proved, my engineer was justified in being skeptical about my prowess with a scoop, and about being able to make anything with Grand Trunk painted on it steam.

Backing up the mile from the roundhouse to the station to pick up the varnished, Number 1913 gave no outward sign that she had taken a personal dislike to me. The fire burned brightly on the grates, the pop valves droned a challenge to the storm king, and everything appeared hunky dory, despite the blizzard which howled all around us. But the 1913 was just kidding me along, keeping under cover the reason why her regular fireman had reported sick at a foreign terminal.

The pop valves still were drumming hard against their seats when we pulled majestically away from the platform, bound for that mecca of newlyweds—Niagara Falls. But as the pops seated abruptly, it suddenly dawned upon me that this was going to be a battle to the death, with me on the losing end.

Dorchester was the first port of call. Number 12 was a local, making all stops between London and the Falls, plus a few more stops not on the timecard. I could see by the steam gage pointer, which hovered uncertainly around the one hundred and fifty mark, that stops to blow up for steam were going to be quite frequent. A steam pressure of one hundred sixty-five was tops, a far cry from the what the big babies carry today.

With the blower valve proclaiming to high heaven that the 1913 was steaming and the injector shut off, I managed to coax the gage pointer to reverse its downward flight; but long before we reached the next stop—Ingersoll—the pointer was back to one fifty again, and showed a decided inclination to remain there. Judging by the number of times Engineer O'Grady consulted his watch, I gathered that Number 12 was not proceeding according to plan. My suspicions were confirmed when the engineer tactfully remarked that he would have to have more steam in order to keep up with the timecard, or words to that effect.

Woodstock was the next stop. While we loaded on the traveling public, express and what have you, the brass-buttoned conductor waddled up to the engine to query O'Grady. I was aloft, filling the tender with much-needed water, and couldn't hear the engineer's remarks. Yet I gathered from the expression on the skipper's features that he didn't get the desired information from O'Grady.

Pulling out of Woodstock, we stalled in a snow drift right under the bridge. Apparently, the storm king wasn't going to make the trip any easier for us; I was beginning to wonder if snow-plow service could have been worse. Anyhow, we backed up to take a run at snow bank, prodigious efforts on my part having succeeded in getting the old mill hot.

We hit that drift with the force of an atomic bomb and broke through, smashing the front headlight and cab windows, and knocking some slats out of the pilot. My seatbox was buried in snow, but that was unimportant. I had long since lost all interest in sitting down. For the balance

of the trip, it would be nothing else but shovel, shake, poke and swear.

Staggering along, trading steam for water, we managed to make the next regular stops at Paris and Brantford. While taking water at Brantford, my wet overalls froze solid, which rather cramped my style when swinging the scoop. The result was a bigger drop in steam pressure; still O'Grady kept his engine plugging along, saying nothing, but thinking a lot, I suppose.

Down the Hamilton Mountain, O'Grady let his engine drift, so I widened on the blower valve. After shovelling the snow out of my corner of the cab, I hit the seatbox for a joy ride; however, I soon discovered it was far from my idea of joy riding. The icy blast, driving snow before it, forced me toward the firebox.

Standing there in front of the door, thawing out my frozen overalls, I watched the water level in the glass. I was not satisfied with its action. In those days, water glasses were covered with a wire shield, which was usually corroded with coal dust and oil from the drain valve of the lubricator. This faulty vision by the way, did little to assist the engine crew in checking the water level in the boiler. I blew the water out of the glass several times before reaching Dundas, at the foot of the long grade. But each time it was too slow rising in the glass, once it had been drained.

Finally, O'Grady took exception to my experiments.

"If you blow that glass again, you'll break it," he grieved. My reply was that broken water glasses coud be replaced, and I was not taking anything for granted.

I COULD understand the engineer's concern about breaking the water glass. Replacing water glasses was quite a chore in those days. Gaskets were not standard, and you had to do considerable paring with a pen-knife before the rubber gaskets would fit the glands. More often than not, the glass would break when fitted into its place and the top and bottom mountings were cut in.

We rolled into Hamilton, considerably off schedule. I was for calling it a day, but since there were no fireman available to relieve me, I had to go through to the Falls. However, I was beginning to doubt that we would make it, without being towed in. Yet there was nothing but to go on. Our engine was cut off and I filled her tank with water, as the yard engine made a couple of passes with the equipment. It was so cold that the valve on the water spout froze in open position. Before I could get the water shut off, Hamilton Station had been turned into a skating rink.

Backing up to couple on to our train again, the car tonk voiced his comments concerning railroads in general. Fireboys in particular come in for extra-special cursing, when he tried to chip the ice from the couplers, and steam and air hosebags. This chipping business, punctuated with numerous adjectives, caused a further delay, but keeping up with the schedule was the least of my worries. I was trying to figure out how to keep the 1913 alive, until we reached the Falls.

I cannot recollect off-hand how many sidings there are between Hamilton and Niagara Falls; but if memory serves, Number 12 pulled into every one of them, while Toronto, Hamilton and Buffalo fliers zoomed past on the high iron, saluting us with derisive whistles which did not add to our peace of mind. Between shaking grates, pulling clinkers and dumping frozen ashes in the ashpan, I was beginning to feel the worse for wear. I never remembered pulling into the Falls, but I do remember O'Grady asking if I could get up steam to pull the train over the International Bridge. Somehow or other, I managed to accomplish the feat, and before very long the 1913 was parked outside the roundhouse at Niagara Falls.

When I finally lumbered into the register room, the engine dispatcher informed me that the London train was just pulling into the depot. If I wanted to get home, I had better beat it over to the station and climb aboard, since no one knew with any certainty when the next passenger train

would be along. So, taking the dispatcher at his word, I dragged my weary carcass over to the depot. Incidently, in the rush I forgot to give O'Grady my name to put on his trip ticket.

I must have presented a sorry looking spectacle, judging by the astonished glances of the drummers as I rolled into the smoking compartment of the day coach. One traveler, who was inclined to be conversational, wanted to know if I filled the large lunch pail—which I had with me—before starting out on a trip. I told the gentleman that I not only packed the lunch pail with all the chow that I could stuff in it, but bought meals enroute in addition. The fellow looked somewhat surprised, remarking that he'd get dyspepsia for a week, if he ate like that. What this fellow didn't know was that engine crews must have the constitution of a horse, the stomach of a goat, and the hide of a rhinoceros to survive.

Thus ended my memorable trip on the 1913, the engine that afterwards blew up at Hamilton West, better known to Grand Trunk men as Junction Cut. Sad to relate, I was not paid for that trip, even though a great deal of correspondence passed between me and the timekeeper. I finally came to the conclusion that Engineer O'Grady had placed his regular fireman's name on the trip ticket. After all these years, I have written the whole thing off.

BEFORE I could shut the water off Hamilton Station was a skating rink

Vermont Vignette

By LUCIUS BEEBE

Photographs by the author and C. M. Clegg

THE ninety miles of single track of the St. Johnsbury and Lake Champlain Railroad run on a northwest-southeast axis through what is probably the most lushy tranquil and pastorally photogenic countryside in the United States. It traverses a land of cows and covered bridges, of the green uplands and hillslopes that have made Vermont famous, of tall silos and slender church spires, of villages with town halls and boards of selectmen, and its rails span gentle streams and winding turnpikes illustrative of all the souvenir photographic guides to storied New England.

The St. Johnsbury is a strangely disorganized railroad, a circumstance which may derive from its ownership by several hundred patron-proprietors who are more concerned with marketing their merchandise over its iron than with the maintenance of a semblance of formal railroading. Its northern terminal is a singularly abrupt one on the margins of Lake Champlain, connecting only with a branch of the Central Vermont and leading practically nowhere. Its operations are an interesting study in utter confusion. Accidents to its ordered progress in the form of washouts, derailments, bridge fires and cornfield meets are so frequent as to be part of an accepted pattern.

The management hates its passenger business and would like nothing better than to be well shut of it, as the Yankee phrase has it; but the communities it serves cling to its idiot schedules with a passionate possessiveness. The forefathers of the village rode by the cars and the current older generation will be damned—or even forego fishballs at Sunday breakfast—before it will board the auto stage. And it is the only railroad in America which, in 1946, still ran its trains over five covered wooden bridges stoutly devised against the assaults of nature and spanning with their architecture not only the ravines they cross but the far greater chasm between the legendary past and the immediate here and now. Compared, say, to the Deleware and Hudson, its neighbor across Lake Champlain, the St. Johnsbury is not an old railroad, but it has its roots in the New England of Longfellow and Whittier and of

Dr. Holmes and that, of course, is ageless.

The St. Johnsbury starts from a tiny mill town near the Canadian border called Swanton where it shares a depot with the Central Vermont. Before its mixed trains have progressed five hundred yards past its two-stall roundhouse and teeter-totter turntable, they pass over its first wooden covered bridge. Its character they carry with them all the way to the other end of the line at St. Johnsbury itself.

Of the four daily scheduled trains on the St. Johnsbury's time card only two, Numbers 74 and 75, mixed, operate into Swanton. Numbers 51 and 52, passenger, run only as far as Cambridge Junction thirty-one miles down the line where they turn and run eastward back to St. Johnsbury. On Sunday the schedule is relieved by a mixed train which leaves St. Johnsbury at 6:15 in the morning, arriving at Swanton at 11:40, where the crew ties up and doesn't return until Monday morning. Usually there are no night runs on the St. Johnsbury, but when the writer visited it in the fall of 1945 a washout at Sheldon Junction had put the entire system on the fritz for two whole days and extras were running at the most improbable hours to move the cars tied up along the line. Na-

NEW ENGLAND PASTORAL, with St.J&LC's freight running wild and extra through Wolcott, Vermont, ancient covered bridge

tives of Wolcott, Hyde Park and Greensboro, startled out of their sleep by crossing whistles in the night, laid the manifestation to ghosts or mince pie dreams, depending on the various ways in which their natures were inclined.

Approximately half way between its terminal points at Swanton and St. Johnsbury and sheltered by enveloping folds of green Vermont hillsides, lies the town of Morrisville, where all the qualities and properties of an archetypal New England hill town are recapitulated in a single community. The railroad enters Morrisville in a winding cut beneath the highway and a south and west axis, departing for Johnson and the blanket mills to the west and north. A block above the gingerbread ornamented depot is the Randall Hotel where we spent the night. Located across the square from the Rexall Drug Store at the corner of Main and Portland Streets, the Randall is all the old time hotels of rural New England rolled into one. Its octagonal corner tower and second story roofed in verandah are out of only yesterday. The clerk who was also manager, came out to help us with our bags and cameras while the permanent residents looked up briefly from a perennial game of bridge whist which had flourished in the lobby for evenings beyond

SEEMING far too small for Number 40 to pass through, covered bridge near East Hardwick trembles to engine exhaust

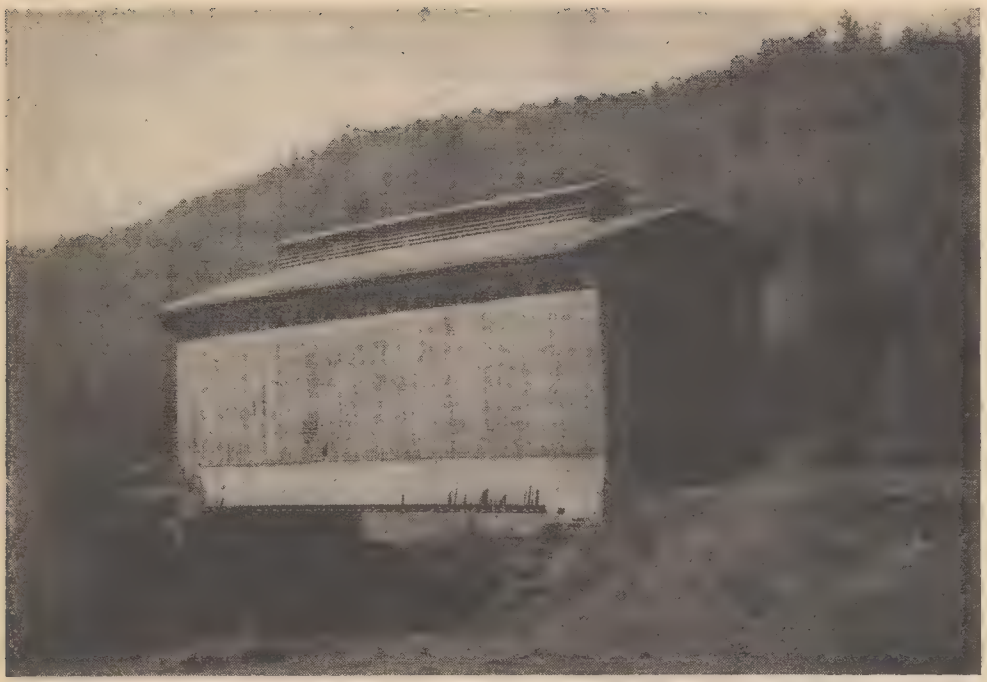
RARE DOUBLEHEADER. Numbers 34 and 40 on the smoky end of a long drag climbing 2.5 percent grade on St. Johnsbury hill

remembering. There are tall pier glasses on the stairs and the corridors are a good eight feet wide.

Like so many country hotels of fifty years ago the Randall is possessed of an upstairs parlor furnished with beautiful early Victorian chairs and a sofa covered with jacquarded horsehair which would have fetched a cool thousand dollars the set in the New York showrooms. There was a spinning wheel, a Singer sewing machine of Grover Cleveland vintage, what must have been the complete works of Zane Grey, and on the table, a little boy's autograph book filled with the round uncertain holographs of his playmates and the more special ones of a few local celebrities.

The New England family hotel where the local teachers board and the Grange meets once a month, with its steel engravings and abundant, simple hospitality is still to be encountered in the Green Mountains, but it is a sweet and dying institution. It supplies its guests

CHATEAU-STYLE DEPOT at eastern terminus of road is shared with Maine and Canadian Centrals



ST.J&LC wooden covered bridge at Wolcott, Vermont, is a relic among simple structures of the bucolic nineteenth century and a landmark in the Vermont countryside, where wooden bridges are by no means rare

with washcloths that are symbolic, somehow, of comfortable austerity and a well scrubbed tranquility, and the night sounds in its corridors seem to call up a remembered world of maple syrup and covered bridges and hot Julys on the dusty turnpikes of yesterday. Our own beds were heavenly with coarse, real linen sheets, a full hunter's moon shone through the southern windows and the whole house echoed sociably to the noises of the plumbing fixtures. Breakfast in the sunny dining room at seven was attended by what must have been the entire body of residents and included popovers and country sausages.

Although the St. Johnsbury and Lake Champlain Railroad has been in operation for more than sixty-five years and is a familiar entity in the Vermont picture, it never was a road of trans-continental promise or of imperial pretensions, economically speaking. No Pullmans ever operated over its sixty pound iron and it has never paid a dividend or interest on its bonds. Its annals, like those of the poor, have been simple.

It was incorporated in the opening days of 1880 to acquire the Vermont Division of the Portland and Ogdensburg, one of the multitudinous lines which criss-crossed New England from the New York boundary to Canada. Similar roads were known to support thrifty Yankees and pay handsome dividends to shareholders in red brick mansions in Boston, Portmouth, Portland and Montpelier. But not the St. Johnsbury. Until 1927 its Boston & Maine guaranteed bonds, as a result of heavy operating expenses due to winter snows, steep grades and the tyranny of a lean and austere climate, never earned their interest. It is problematical whether or not the road's financial history would have been happier if it had been built to a narrow gage as were so many other lines of the era.

In any event the B&M withdrew its support in the middle twenties, and the St. Johnsbury's operation was assumed by

ON THE DOWNGRADE, Number 40 reels through deep cuts and over high fills into St. Johnsbury

almost five hundred stockholders, most of whom were merchants, manufacturers or farmers along its right-of-way and far more interested in the road's freight operations than in its overall financial returns. For a time it even showed a slight margin of operating profit. Its nine locomotives rolled up and down the pleasant Vermont hillslopes in summer and bucked incredible snowdrifts in winter.

Now-a-days, milk is its largest single source of revenue and its entire being is predicated on similarly rural industries and manufactories. During the war it enjoyed a considerable revival of passenger business and its mail and express traffic have always been considerable. In his *Slow Train to Yesterday* Archie Robertson tells how when he visited the "St. Jesus and Late Comin'" its baggage compartment was full of peeping chicks. By coincidence when we encountered it, the principal business of the day was chicks in heavy cardboard cartons and firkins of maple syrup.

At St. Johnsbury, where a two and a half percent grade curves up out of the town, a double headed freight drag, the first in several weeks to require two engines, was waiting for Number 52 to clear.

It snorted and thundered up the hill and under the white cement highway bridge in a fine approximation of big time railroading. Because it never knew spacious days, the St. Johnsbury is not a sad or declining railroad. It is a lean property, just as it has always been, its tracks laid beside placid millponds and across green meadows bordered with green hemlocks and pines where pastel mountains loom against the southern horizon. The cows and the covered bridges are as much a part of its economy as are its Spanish War combination coaches and its aging locomotives of vaguely Boston and Maine pattern. More than many a railroad, it is harmonious to its background of horse and buggy travel along country roads.

WASHOUT near Highgate, Vermont, held up operators on the St. Johnsbury & Lake Champlain for twelve hours in spring of '45

Hobos and Hot Cotton

By CHARLES A. ROACH

I've Got No Use for Rod-riding Tourists—They Gave Me the Scare of My Life in a Blazing St. Louis-Southwestern Boxcar

FACTS prove that strikes invariably cause railroads plenty of trouble. It doesn't make any difference what industry the strike involves, it displaces employed men and they, in turn, are soon broke and restless. So they head for the railroad to ride somewhere. Ofttimes to seek a job in other places, or just to get away from where they are unable to find employment.

I well remember how the country was swarming with train riders back in 1894. That year coal mines throughout the United States were on strike. Then the Pullman strike helped put more men on the unemployed list. When A. R. U. men joined in, one of the worst unemployment situations I believe this country has ever had was caused. It cost the railroads millions from looted cars alone.

I was in the A. R. U. strike myself. And I wandered over several states looking for a job without finding one. Then, in one of fate's off moments, I struck a job. Under a fictitious handle, of course.

Like thousands of others, I had wandered through the great wooded regions of Missouri, Arkansas, Louisiana and part of east Texas, where a man could build a jungle fire and keep warm.

Thus, I rode into Hornbeck, Louisiana one night and discovered brakemen were needed—if they were not Union men and from some other road. I had no trouble explaining I had never made a trip on a train and was perfectly green at the duties. At four a. m. that very morning, I went out as a brakeman.

The Kansas City-Pittsburg & Gulf, later the Kansas City Southern, was a new road then, and braking on that pike was no easy job. There were plenty of merchandise cars in each train, and it was my duty to keep those merchandise cars from being broken into and their contents stolen by the wandering fraternity of which I had been a member.

Jungle fires burned at each station and in between and the men, being husky and determined as well as hungry, thought nothing of raiding a boxcar for food. There were no yard bulls then except at large terminals and no cops riding the merchandise trains. So it was all up to the three shacks and the conductor to keep cars from being broken into and the contents taken. If we failed, the road paid heavy damages to owners of the merchandise; in addition, there was a loss of reputation as a reliable carrier.

At that time air brakes were not in universal use, and the three brakemen on each train set brakes by hand, using a big stick for leverage to stop a car or the whole train. These brake clubs came in quite handy whenever a tough gentleman who did not have much regard for a brakeman's authority had to be handled.

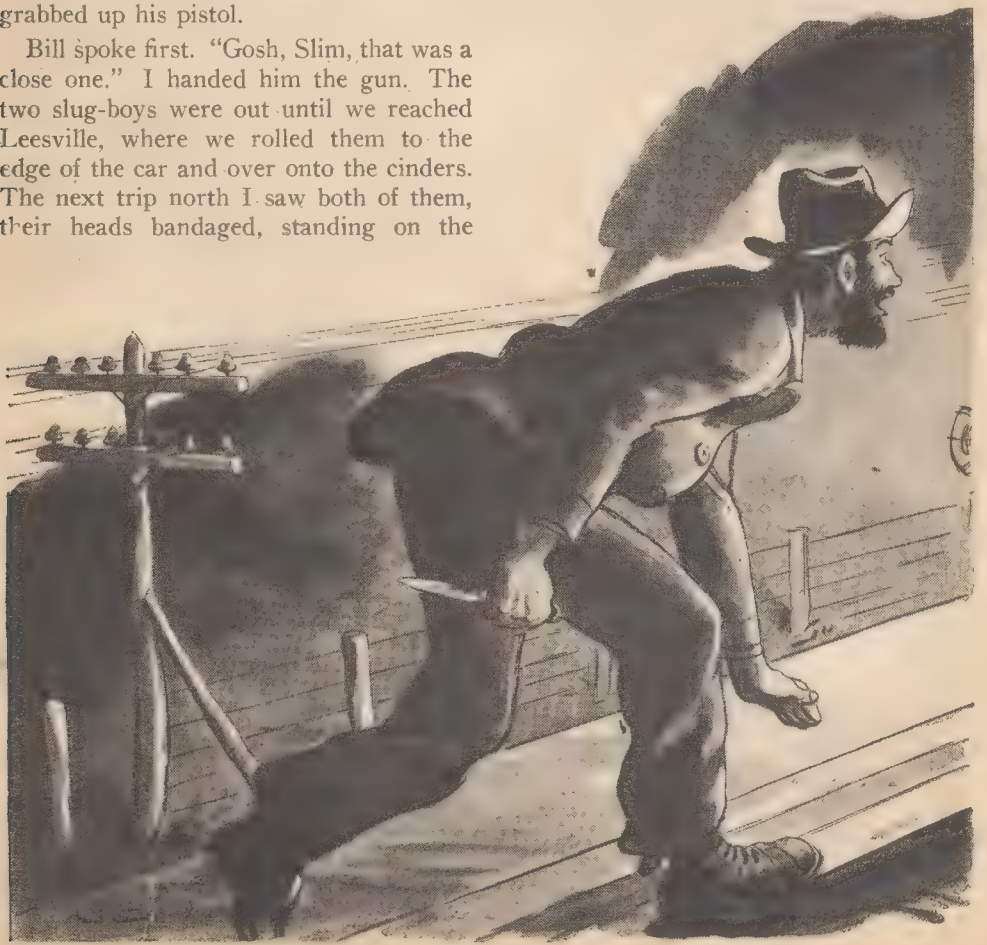
One night shortly before I had my most exciting experience on a railroad, I was designated as the swing man, or middle brakeman. We rolled out of Hornbeck on an extra about 9:30 p. m. with Bill Tanner as head man. By the glare from the firebox door as the fireman shoveled in coal, I saw that Bill was having a controversy with a couple of riders. It often took two men to make a good job of getting smart and tough men off, so I began to move forward. When I was about six or seven car lengths from Bill, I saw his lantern make a sudden circle and go out. I figured he had struck at one of the men with the lantern. That meant they had

grabbed his brake club. Just as I got to them a big savage fellow hoisted Bill to throw him off the top of the car. I dived in. A sudden, well-placed smash of my brake club felled the big guy. Teetering on the edge of the car top, Bill yelled at me, "Look out, Slim. The other guy has a pistol." In a second, he moved and I could see by the light of my lantern a face glaring out from under Bill's right arm. The gun barrel came up, pointing at me.

I could almost feel the leaden slug entering my body. I swung my club and dived at him, all in a split second, without any spoken warning to Bill to side step. The pistol barked just as my brake club met bone. Bill had jumped aside in perfect timing. As the bad actor slumped unconscious to the bouncing car roof, I grabbed up his pistol.

Bill spoke first. "Gosh, Slim, that was a close one." I handed him the gun. The two slug-boys were out until we reached Leesville, where we rolled them to the edge of the car and over onto the cinders. The next trip north I saw both of them, their heads bandaged, standing on the depot platform at DeQuincy, some twenty miles from where we had put them off.

It was our policy to search the train together. Two men could handle most any group or pair, except when they swung under on the rods as the train pulled out of a station. These smart guys could crawl half-way out from under the car while it was speeding along, reach up, break the seal on a merchandise car and climb inside. Once in, they'd gather what edibles they found, and anything else they could sell or trade. Then before the train stopped on entering a station, they'd hit the ground and be out of sight of any trainman hoping to catch them. No usual hoboes, those men.



ONCE in a while a lone rail encountered a tough pair. Such a situation was thrust upon me one night as our train highballed it for Beaumont, Texas. We had stopped at DeQuincy to pick up some cars and set out others. There were no signs of any sneak artists up to this point and the road seemed clear for a peaceful ride into Beaumont.

Bill, the head brakeman was up on the engine, as I started to walk back to the caboose for a cup of java. About half way back, I glimpsed two men sitting on the running board, as unconcerned as if the train belonged to them. Neither made a move to get away as I approached. Sensing trouble from the indifferent way they acted, I growled in my harshest manner, "What the hell are you men doing on here?"

AT the same instant the whiskered lad flashed a knife and I went to my knees

The man nearest me chuckled boldly, "Riding—can't you see!"

"Well, you're not riding far," I said. "We stop about three miles down the line. You get off there and stay off."

The two huskies rose to their feet. One, I observed, was quite short in spite of his breadth. The other wore a bunch of black whiskers on his chin. Above the whiskers his face was that of a young lad not over twenty.

He said, "We have got to get to Beaumont tonight, and you can't keep us from riding on this train." His voice seemed rasping, and a little nervous, like a man getting up his nerve. Yet he spoke as if he had some way of making the trip, regardless of whatever action I took.

A scuffle on top of a moving box car at night is not a safe thing to undertake, no matter how sure-footed you are. I moved a step or two just as the short fellow dived behind me. At the same instant the whiskered lad flashed a knife. With a good grip on my brake club and my left hand holding my lantern, I was ready to slug it out with him, knife or no knife.

But before I could get in a lick, the short lad jumped on my back. He was a husky, strong-armed fellow and clung so tight I could not shake him off. All the time he was trying to get his fingers around my throat. Seeing I was in a difficult predicament, I did what I thought was best in such a situation. I dropped on my back hoping to be able to stay on the running board, and smash the short man's head against the hard boards. But as I went down, the whiskered lad lunged with the knife. My club had dropped as well as my lantern and I was using both hands to prevent being choked, which put me practically at the mercy of the whiskered fool.

As I fell, I drew my feet up, and kicked out at whiskers, striking him in the mid section hard enough to set him back on his heels. Before he could regain his balance, one of his heels struck a raised ridge of the car roof. He kept going backward, letting out a wild screaming yell as he went off the car top.

That left just one more to get rid of. I began to claw at the short fellow to get him around in front where I could smash his face with my fist. No good. His short legs clamped my body in such a tight grip I was unable to get him off.

Now I recalled a car of lump coal back of the one on which we were doing this rough and tumble scrap. I managed to get to a standing position with Shorty riding my back like a wild cat. Then, with him clawing to drag me down and no lantern light, I started along the top of the swaying car. The edge of the car was cold fear in my mind—and all the time that clawing bucking hoodlum trying to strangle me while his legs encased my ribs in a grip I could not change.

Yet if I could reach the coal car I could dive off the boxcar and try to turn enough in falling to catch Shorty under me. There was a chance he might be knocked out. Of course, I ran the risk of getting socked a healthy blow if my head should strike the large lumps of coal. It was a desperate chance, but the only way I could figure out to get the man off.

I didn't feel the car end above the coal with my toe when I came to it. I just went over, suddenly, wishing I'd hit the right way. We struck in a heap. I heard a loud grunt from beneath me, then my head smacked against hard coal, and I was floating along through a million stars, which seemed to twinkle brightly before my eyes for a second and then snuff out.

The next thing I felt was a hand pulling at my arm, while a voice asked loudly, "Hey, Slim, are you hurt bad?" It was Jake Stovall, our hind man. When I tried to raise up, he said, "I saw you when the fireman opened the fire door, just as you dived out of sight. I thought you had gone down between the cars. Gosh, but I'm glad it wasn't that way."

He helped pull me to my feet. Seeing the short man stretched out near me, I chuckled, "Well, he got what I hoped for when I dived off the top."

Jake asked quickly: "Dived off! Cripes, did you dive off on purpose?"

"Of course I dived off. What the hell else could I do with him clutching me around the middle with his legs, and his arms around my neck trying to choke me, and smashing his fist into my jaw every chance he got!"

Muttering, "Well I'll be damned," Jake led me back to the caboose where our conductor stuck some tape on my cut head. Then I got another lantern and brake club and went back to the coal car, ready to put the wise guy off when we stopped at the next station. But when I reached it Shorty was gone.

SUCH encounters were fairly regular that fall and winter. Then came the night I met up with disaster—and that was no ordinary experience, though it began in the usual way.

We were on an extra which left Hornbeck at 10:30 p. m. with a few loads to set out along the line and orders to pick up all foreign empties. Everything went along fine until we stopped at De Ridder,

THE ONE who stuck in the car dared me to haul him off

where a large sawmill was being constructed. There we set out two cars of machinery, and picked up two empty boxcars. Since our engine was air-equipped, we had placed five air-braked cars from an eastern road next to it. Naturally, we coupled the two empties in behind the last of the air-equipped cars.

It was while doing this that I observed three men sneaking along the edges of the train.

As soon as I highballed the engineer, I climbed on top, and ran along to where I could watch the empty cars. The minute the train moved those three men opened a side door and jumped in. I went down the side ladder and jumped off ahead of the open box car door. It came alongside, and there stood the three men as boldly as if they owned the car. I yelled, "Okay, you lads. Come out and don't leave your baggage. Make it snappy." They all

ON the way to the wreck, the engineer talked with three burned guys . . .

laughed at me, but two of them climbed out, and jumped off. The one who stuck in the car dared me to haul him out.

The engineer was taking her out slowly, and for some reason the head man was not around to help me unload the smart guy. I jumped into the empty car, and started after him. He headed for the rear end, toward the caboose, where an end window was open. Still laughing and taunting me, he jumped out the window. That looked like the end of it, but to prevent him returning to the empty car through the window, I closed it and fastened the latch on the inside. At the same moment, the side door slid shut with a bang; before I could reach it, I heard the outside latch being fastened. Those wise hombres had decided to have some fun with me, I thought, and turned back to the end window, intending to open it and climb out on top again.

It was then I discovered a surprise. The end window was now latched on the outside. The train had gathered speed in the meantime. Such a predicament was provoking but scarcely seemed dangerous. I set my lantern down and filled my pipe for a smoke as I viewed the interior of the car. The grain line was high, and very smooth, with no projections I could unfasten and use as a hammer or bar to burst the door open. I sat down on the floor to think things over.

I saw then that there was two grain doors fastened to the ceiling and supported on iron bars about an inch in diameter. "Now, if I could pry one of those bars off, then I could burst the door open," I thought. So I went to work trying. I let one end of one of the doors down, and with the weight of the door hanging on a single rod, I began to jerk and twist the door. The bolt began to loosen. Then, by grasping the nut holding the rod to the car side, I twisted it clear of the wall bolt. When I lifted the grain door up off the loose rod it snapped away from the wall; all I had to do then was bend the rod back and forth a couple of times until it broke off down near the floor.

With the broken rod, I advanced on the end door. Making several stabs at the one layer of boards that formed the main part of the shutter, I soon split a hole in it, reached outside through the hole and tried to unlatch the pin. It was then I discovered the smart guys had shoved wire through the seal slot and had twisted the wire into a hard knot which my fingers could not manage. This was vexing enough to call for some vitriolic remarks addressed to those three rod-hopping artists. Of course, I figured they were laughing over my difficulties right then while, safe in a merchandise car, they burst open canned goods and wolfed down crackers and cheese.

I pounded the boards angrily with the end of the rod. At every smash I split off a small piece. There was nothing for it but to beat the door down gradually. The air rushing through the small hole I'd made was cool and . . . I stopped suddenly, and sniffed. Something was burning. The odor was like rags burning. Cotton . . . There was a car of cotton destined for Port Arthur three cars behind the engine.

It was a Cotton Belt car, and air-braked, which was the reason for it being so close to the engine. Although we had orders to set cotton cars at least ten cars away from the engine, I had risked it this time so the engineer could use his airbrakes.

I now began attacking that end door with all the energy possible. The harder I worked the surer I was the odor was that of burning cotton. I had the iron bar between the edges of the door now, trying to pry it up and shove it off the slide rail it worked on. By now smoke was getting thick inside the car, and I was pulling and wrenching at the door in frantic haste.

It came free quite suddenly, and swung out with only the latch holding it. I gave a big yank and the door dropped down onto the coupler, bounced around a couple of times and then down onto the rails, right in front of the wheels of the car behind the one I was in. The next instant things began to happen. The end door

of the car behind me was partly open, but the lumber in the car was jammed so tight against the roof the end door could not be opened further. The same minute, the overloaded car ran over the end door I had dislodged, and hit the ties.

One jump and the empty I was in hit the ties too, the loaded car pulling it off the track. My lantern gave a couple of bounces on the floor and died a natural death, leaving me trying to keep my feet in the dark and wondering when the car of lumber would turn turtle and crash on top of the empty. Fully aware of my danger, I was in no position to do a thing except hold on to the door frame. The careening lumber car seemed to dance and all of a sudden the empty stopped dead. I was thrown the full length of the car, and landed against the other end with a crashing bang that knocked the wind out of my lungs.

Sometime later, I realized that Jake Stovall and my conductor were pulling me out of the capsized empty. It had turned entirely over once, and me with it. I was scratched and bruised terribly, and my left leg was giving me great pain. My conductor, John Thorn, remarked: "Slim, your leg is broken. Don't try to stand on it." My eyes were almost closed with swelling from the beating I had taken inside the empty as it rolled off the track.

STOVALL and Thorn made a seat with their hands and carried me back to the caboose. Thorn gave me a big shot of whiskey, telling me to lie still until a doctor could be found. It proved a long time, for Bill Tanner, the head brakeman, had discovered the train behind the burning car of cotton was in the ditch, and had the engineer make a five-mile run to a log loading spur, where he set the burning car out before it consumed the entire load of baled staple. Meanwhile, knowing the track was torn up and track men would be needed, the engineer had run on in to Singer, the nearest station, to report the wreck.

On the way back to the wreck, the engineer observed three men walking along the track. One of them waved his hat in a signal for the engine to stop. The engineer did so, and then stared in astonishment as the men, covered with mud and their clothing water-soaked, asked for some oil.

Tanner asked: "What do you want oil for?"

"We was in that danged cotton car that's burning' back there a ways. One of the boys struck a match to light a cigarette, and the danged car caught fire in a flash. Gosh, we was lucky to get out alive. All our clothes was on fire. We found water in a barrow pit and rolled in the mud and water until the fire was out. Now, if we can get a little oil to put on the burned places, it will ease the pain." The speaker's eyebrows and mustache were burned to a crisp. The other two had most of their hair burned off as well as most of their clothing.

After giving them oil to put on the burned surface of their arms and faces, the engineer bid them good luck, opened the throttle and came back to the wreck. When I was told how the fire started, I knew those men were the same ones who trapped me in the empty. They got a good dose of what they had given me . . . fright.

While I was thinking of this Thorn came in and remarked to Stovall, "We were lucky in getting Slim out of that empty this morning when we did. I was just down by the wreck and that car of lumber that was standing on end near the empty has toppled over and mashed the empty as flat as a wad of sidewalk chewing gum." He did not know how I had expected that very same thing to happen the instant the lumber car jumped the track. I had escaped death by just a few minutes.

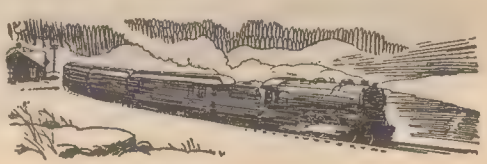


Photo by R. P. Morris

BALDWIN SWITCHER 1119 works the yard at Ft. Myers, Fla.

Locomotives of the Atlantic Coast Line

Steam Locomotives

Class	Numbers	Cylinders	Drivers	Pressure	Engine Weight	Tractive Effort	Builder and Date
			0-6-0 (Switcher) Type				
E-4	126, 127, 134, 136, 138, 139, 144–146, 148, 149, 151, 152, 154, 156, 161, 163–166, 175–179, 183–186, 190	19 x 24	51	180	108,565	26,510	Baldwin, 1904–10
E-10	1100–1125	19 x 24	51	180	121,050 126,800	26,510	Baldwin, 1912–13
E-11	1126, 1127	19 x 24	51	200	129,550	29,457	Baldwin, 1916
E-12	1128, 1130–1135	20 x 24	51	200	129,250	32,000	Baldwin, 1917
E-9	1136–1145	21 x 28	51	190	163,500	39,100	Alco, 1918–19
E-13	1146–1150	21 x 28	51	190	163,600	39,100	Baldwin, 1920
E-7	1151–1158	22 x 26	51	180	160,000	37,750	Baldwin, 1925
AS-1	7023–7028†	20 x 26	54	190	150,226	31,103	Baldwin, 1906–07

BIG GOAT. She's the 1230, outshopped in 1926

THAT'S a cone-shaped manhole pipe, not a diamond stack, on the tender of 1434

TEN-WHEELED 1024 on the ready track at Kingston, N. C.

Photos above by Richard E. Prince, Jr., 1141 Larchmond Crescent, Norfolk, Va.

THE ROAD has a big fleet of Alco Pacifics of which the heaviest are the P-5a's

Class	Numbers	Cylinders	Drivers	Pressure	Engine Weight	Tractive Effort	Builder and Date
			0-8-0 (Switcher) Type				
E-14	1200–1234	25 x 28	51	185	{ 213,710 { 215,300	53,960	Baldwin, 1923–26
AS-2	7031–7033‡	23½ x 28	54	200	{ 184,600 { 190,000	48,650	Baldwin, 1907
			0-4-0 (Switcher) Type				
A-Dummy	1434	17 x 24	45	150	98,000	19,650	Baldwin, 1905
A-Dummy	1435	17 x 24	45	180	98,000	23,580	Baldwin, 1912
			4-8-0 (Switcher) Type				
AS-3	7034‡	21 x 30	57	200	210,000	39,460	Baldwin, 1906
			4-6-0 (Ten-Wheeler) Type				
K-14	245–254	20 x 26	69	200	179,940	25,625	Baldwin, 1910
K-6	356, 358, 359, 362, 363, 369–372, 375, 377, 379, 380, 386, 387, 389, 392, 396, 397	20 x 26	64	185	{ 150,158 { 170,300	25,550	Baldwin, 1904–21
K-6	900, 904, 907	20 x 26	64	185	169,400	25,550	Baldwin, 1906
K-5	911, 922, 926–928, 930, 931, 937, 939, 941, 946, 954, 956, 963, 964, 971, 975, 990, 994, 996, 1003	20 x 26	64	185	{ 149,910 { 169,900	25,550	Baldwin, 1906–20
K-14	1006–1011	20 x 26	64	200	179,940	27,600	Baldwin, 1910–21
K-15	1012–1019	20 x 26	64	200	173,200	27,600	Baldwin, 1912
K-15	1020–1044	20 x 26	64	200	173,200	27,600	Baldwin, 1913
K-16	1045	23 x 26	64	200	207,300	36,600	Baldwin, 1922
AW-1	7060‡	19 x 26	63	200	150,000	25,330	Baldwin, 1907
AW-2	7064‡	19 x 26	67	200	150,000	23,820	Baldwin, 1907
AW-3	7101, 7103, 7106, 7108, 7112, 7113‡	23 x 28	63	185	{ 186,200 { 196,000	36,950	Baldwin, 1906–07
AW-4	7115, 7117–7119, 7121‡	23 x 28	67	200	186,200	37,580	Baldwin, 1906–07
AW-3	7122‡	23 x 28	63	200	196,000	39,960	Baldwin, 1907
AW-4	7123, 7124‡	23 x 28	67	200	186,200	37,580	Baldwin, 1907
			4-6-2 (Pacific) Type				
P-2	400–410	22 x 28	64	200	225,900	36,000	Baldwin, 1913
P-3	411–451, 453–455	22 x 28	69	200	{ 226,800 { 228,300	33,400	Baldwin, 1914
P-4	456–482	23 x 28	69	200	243,850	36,600	Baldwin, 1917
P-5a	1500–1569	25 x 28	73	200	{ 278,000 { 291,210	40,750	Alco, 1919–20
P-5b	1600–1685, 1687–1764	25 x 28	69	210	{ 278,520 { 290,700	45,275	Baldwin, 1922–26
AJ-1	7071–7073, 7075, 7077, 7080–7084, 7086	22 x 26	69	200	204,000	31,000	American, 1911–13
AJ-2	7153, 7175‡	24 x 30	73	210	251,200	42,250	American, 1914
			4-8-2 (Mountain) Type				
J-1	1401–1405†	28 x 30	69	210	376,000	61,135	Baldwin, 1924
AM-1	7351, 7372‡	26 x 28	72	210	320,650	46,920	American, 1924
			4-8-4 (Northern) Type				
R-1	1800–1811	27 x 30	80	275	460,270	63,900	Baldwin, 1938
			2-8-0 (Consolidation) Type				
L-1	714–716	21 x 28	56½	200	167,500	37,150	Baldwin, 1905
L-2	717–720	21 x 28	56½	200	170,800	37,150	Baldwin, 1911

‡*Acquired from the AB&C.*
†*Rebuilt in 1943.*

Photo by W. H. Thrall, Jr.

FREIGHTERS earmarked "Baldwin" from pilots to Vanderbilt tenders, Q-1s are used for heavy drags

Steam Locomotives

Class	Numbers	Cylinders	Drivers	Pressure	Engine Weight	Tractive Effort	Builder and Date
			2-8-2 (Mikado) Type				
M	800–811, 813–817, 819	22 x 30	56½	200	242,300	43,690	Baldwin, 1911
M-2	820–829	27 x 30	64	200	280,700	58,000	Baldwin, 1918
M-2	830–836	27 x 30	64	200	295,030	58,000	Baldwin, 1923
AK-1	7205, 7208, 7209, 7213‡	24 x 30	57	185	252,400	47,670	Baldwin, 1912–14
AK-2	7225, 7228–7233‡	25 x 32	63	200	277,800	53,970	Baldwin, 1914
AK-2	7226, 7227‡	25 x 32	63	185	277,800 282,500	49,920	Baldwin, 1914–15
AK-2	7234, 9235‡	25½ x 30	63	200	277,800 282,500	52,640	Baldwin, 1912–13
AK-2	7301, 7302‡	25½ x 32	57	200	279,500	62,060	Baldwin, 1910

‡*Acquired from the AB&C.*

Photo from collection of O. W. Witbeck

ALCO and BALDWIN each got a share of this Decapod order

ANOTHER PRODUCT of the Philadelphia watchmaker: a lightweight Mikado

Class	Numbers	Cylinders	Drivers	Pressure	Engine Weight	Tractive Effort	Builder and Date
			2-10-2 (Santa Fe) Type				
Q-1	2000–2019	30 x 32	63	210	391,980	81,600	Baldwin, 1925–26
AF-1	7401 ‡	27 x 30	63	200	323,900	59,000	Baldwin, 1917
			2-10-0 (Decapod) Type				
O	8002, 8003, 8005–8009	25 x 28	52¾	180	210,000	50,760	Alco, Baldwin, 1920

Diesel Locomotives

Class	Numbers	Horsepower	Engine Weight	Tractive Effort	Builder and Date
		(Switcher) Type			
DES	600	1,000	229,000	68,700	Alco, 1940
DES	601	1,000	247,900	61,975	EMC, 1940
DES	602, 604	1,000	230,000	69,000	Alco, 1942
DES	603, 605	1,000	242,650	62,500	EMC, 1942
DES	606, 607	1,000	237,600	72,000	Baldwin, 1942
DES	608	1,000	238,530	71,560	Baldwin, 1942
DES	609	1,000	237,130	71,140	Baldwin, 1942
DES	610	1,000	230,000	69,000	Alco, 1942
DES	611	1,000	242,770	60,690	EMC, 1942
DES	612	1,000	230,000	69,000	Alco, 1942
DES	613–615	1,000	250,000	62,500	EMC, 1942
DES	614	1,000	230,000	69,000	Alco, 1942
DES	616	1,000	240,930	72,280	Baldwin, 1943
DES	617	1,000	240,580	72,175	Baldwin, 1943
DES	618, 620,	1,000	230,000	69,000	Alco, 1944
DES	619, 621,	1,000	240,000	72,000	Baldwin, 1944
DES	624, 626, 628, 630, 632, 634, 636, 638, 640, 642	1,000	230,000	69,000	Alco, 1944
		("A" Road Unit) Type			
DEP	500, 501	2,080	200,243	50,570	EMC, 1939
DEP	502–523	2,000	203,560	51,280	EMC, 1940–42
DEP	524–531	2,000	209,980	52,570	EMC, 1945
DEP	532–537	2,000	208,670	52,570	EMC, 1946
		("B" Road Unit) Type			
DEP	750–754	2,000	198,460	50,000	EMC, 1940–42
DEP	755–764	2,000	200,140	50,200	EMC, 1945

‡*Acquired from the AB&C.*

Courtesy Denver & Rio Grande Western

WHEN Rio Grande scraped the bottom of the barrel for rolling stock. A double-headed troop train, shown battling its way toward Moffat Tunnel

On the Spot

Railfaring Men Sit With the Editorial Crew to Swap Experiences, Offer Suggestions and Settle Arguments

REGARDLESS of its effect on certain top rail officials who consider their passenger business as little more than window dressing for their freight, Donald M. Steffee's highly controversial article in our December issue, "Revitalizing Passenger Traffic," has at least revitalized our *Spot* department.

A snowstorm of mail from all over the country, larger that that which greeted the publication of any other recent *Railroad Magazine* feature, testifies to the fact that our readers are alert to the need for correcting obvious defects in the transportation setup that too many brass hats ignore.

In a future issue Mr. Steffee, who has long made a study of passenger trains and has often written on the subject, will offer specific suggestions for new routes and services. Meanwhile, here is a fair sampling of the reader reaction to his December article. We start with a letter from a community leader of Parsons, Kan., a grain-belt center served by the Frisco Lines, the Katy and the Union Electric.

"It is heartening to see *Railroad Magazine* go in for some first-class needling of railroad management," writes Rev. John M. Bodimer, 313 S. 18th St., Parsons, rector of St. John's Episcopal Church. "I can think of no group that needs it more. If the brass hats can be made to pay attention to such criticism, opportunity is knocking at the door."

Our correspondent cites the Katy passenger-train schedule between his town and Kansas City. There are three trains leaving Parsons—at 4:05 a.m., 5:10 a.m. and 7:05 p.m. respectively.

"Rather than get up in the middle of the night, many Parsonians, myself included, travel twenty miles west to Cherryvale and board *The Tulsan*, a Santa Fe streamliner. There's a rumor that the Katy will give us a 9 or 9:30 a.m. train. I hope so.

"The trip to Kansas City takes only forty or forty-five minutes by rail, but from three to four hours by automobile. Once the motorist is there he's faced with the problem of parking. If he could make the journey by train at a convenient hour he could avoid the worry and strain of driving and finding a place to park. The latter is no small job in K.C.

"I am sure railroads would get more income if such service were supplied to metropolitan centers. There is business to be had if management will provide it and advertise it. Mr. Steffee mentions Oil City, Pa. No Oil City business man having to go to Pittsburgh would think of taking the train unless his car were in a repair shop and the bus lines on strike. If he did decide to travel by rail he'd have a choice of leaving at 3:40 a.m. or enduring the 4 p.m. local which consumes 4½ hours on a 121.6-mile run. Not only that, but if he took the local he'd ride in some of the worst passenger equipment the Pennsy owns. There was a time when the night train had an Oil City-Pittsburgh sleeper, but that, alas! was a casualty of the depression."

The Rev. Mr. Bodimer, who spent his first two years of seminary training at Gambier, O., four miles from Mt. Vernon, says he can appreciate Mr. Steffee's remarks about the residents of that vicinity not knowing anything about streamliners. "Most of them," he amplifies, "are probably not aware of the railroad at all except when they are held up at the crossing by a long freight."

The rector protests that *Railroad Magazine*, prior to publication of "Revitalizing Passenger Traffic," had recently been giv-

ing too little attention to passenger service.

"Just look at your Annual Index and see what I mean," he continues. "On the basis of some of the stuff you print, a reader might gather the impression that certain roads run only locomotives. Let the PD&G buy a new 4-6-4 and we get pictures and statistics. But if, on the other hand, the PD&G puts on a new passenger train with new equipment, what does *Railroad Magazine* do about it? Sometimes you print merely an announcement—no photo, few details. If you do run a picture, it is usually an exterior shot taken from the head end. Passenger cars have interiors; that's where people ride. How about furnishing more interior photos as morale-lifters to those of us who don't know what a poppet valve is and don't care but are desperately interested in getting folks to ride trains and in persuading rail management to schedule trains for them to ride?

"I trust we hear from Steffee soon again, and often. Let's have less oldtime glamor and more twentieth century plush. I don't see aviation magazines featuring *'Kitty Hawk days'* or 'Adventures in an Early Triplane,' nor do the bus journals play up the blizzard of 1917 as recalled by Joe Whoozis, who drove the first Podunk-Kickapoo jitney. If enough shouting is done, maybe rail officials will wake up. Steffee has made a good start."

Another minister, Rev. Edward Lathrop of the United Brethren, Brownstown, Ill., has been analyzing rail traffic for years, having come of a rail family himself, and says he is " quite ready to enjoy any article such as those Steffee presents."

"Out here," he writes, "the Chicago & Eastern Illinois for years neglected its Southern Illinois branch. Recently, however, the branch acquired a streamliner, *The Meadowlark,* whose run extends on from Villa Grove to Chicago. The train achieved instant popularity and has had to add more coaches. It picks up southern Illinois travelers early in the morning. Instead of changing at Villa Grove as of old, they go on through, get four hours in the metropolis, and are back again by night of the same day. Good work, at last!

"Unfortunately, the run stops at Cyprus, Ill. Had it been extended a few miles farther it could have connected with *The Rebel* on the Gulf, Mobile & Ohio and the St. Louis Southwestern. This branch could have been made more remunerative long ago through a merger with the Cotton Belt Route, thus establishing a direct Chicago-Dallas run bypassing St. Louis. Too many miles of rail that have gone under could have been used profitably by other railroads."

" 'Revitalizing Passenger Traffic' is the best article I've read in a long while," enthuses Harold H. Carstens, 290 W. Englewood Ave., West Englewood, N. J. "It stirred up my railroad interest, which had been lagging."

The "lagging" seems to have been due to the wet blankets he found at certain railfan meetings.

"Listen to them chatter. They rave about a speed record set back in 1867. Try to talk about modernization. Bingo! Out you go. Try to get the different railfan clubs to work together toward a common goal, with maybe an occasional joint meeting to discuss local conditions. Try it! A few are willing, but the majority yell 'Communist'! No luck. Some wait with exultation as railroad lines are scrapped, then write histories about them.

"As for railroads, take the West Shore, for example. Miss a train and there is a two-hour wait. Why not utilize streamlined MU railcars for service as far as Newburgh?"

We now hear from James R. Burns, RFD 1, Cumberland Center, Maine: " 'Revitalizing Passenger Traffic' is the most instructive, penetrating and logical article I've ever read on rail transportation problems. Steffee knows his railroads. I only hope the directors of our many far-flung systems pay serious attention to his progressive, common-sense suggestions. Here in New England the reliable Boston & Maine is alert to needs of the local trade."

Another New England reader, a Meriden, Conn., man who prefers anonymity,

is convinced that our author is on the right track "because his facts regarding the situation on the New Haven road, with which I am most familiar, are correct and his deductions more than justified."

"Forty years ago," says the Meriden man, "the traveler between New York and Boston had at least three routes, each approximately equal in service. He could go by the Shore Line or via Springfield or the Highland Air Line (Hartford and Willimantic). We in Meriden and Hartford had the last two, with through service. By that time the Air Line via Middletown carried only local service, but in view of the additional business which could be picked up from Meriden, Hartford, New Britain and Waterbury, the routing via Hartford was probably justified.

"However, as Mr. Steffee says, the railroad tried to give local service with through trains, and gradually killed it. We finally got to a point where there was one train, the *Highland Express,* starting from New Haven in the morning and going via Willimantic. Now, for reasons known only to the New Haven road, the Highland train starts from Hartford. Passengers from New Haven or Meriden must go to Hartford and change cars—there is not even a through coach from either Hartford or Waterbury. One of the answers to this situation probably is that a Shore Line train has been fitted in to drain off the traffic from New Haven and below."

Our Meriden correspondent finds this setup very inconvenient for Connecticut eastern towns, but says it would not make so much difference to central Connecticut if the New Haven did not pursue such a short-sighted policy toward Boston-New York service via Springfield.

"Every means short of outright dropping from the schedule has been used on these trains," he complains, "to prevent the Boston & Albany from getting any share in the business. Fifty or more years ago this was the leading route between Boston and New York, with four daily trains each way. There are still four, but their running time is no better than it was about thirty-five years ago—in some cases it is worse. They make more local stops, and head-end business delays them inordinately. If there is a choice of cars going beyond Springfield, the antiques are always used.

"At one time Meriden train announcers didn't even admit trains went further than Springfield. The B&A tried to attach names to them but, with no cooperation from the New Haven, gave it up. Every Shore Line express is a named train. Not one via the Springfield line is named, which shows which way the wind blows. Middletown doesn't even have a railroad station. Its residents, who number 25,000 must take buses to Meriden for New York or Springfield. Norwich also, a city of 30,000, does not have a single steam train!"

No wonder many travelers prefer to go by automobile or airplane, according to the Meriden complainant. The Cross Parkway, a continuation of Merritt Parkway, is so far completed that, with the exception of a runaround in New Haven, it will be possible this winter to motor all the way from Hartford and Meriden without encountering a single traffic light or crossroad!

While Thomas B. Annin, Rd 1, Box 209, Red Bank, N.J., agrees "substantially" with Steffee's views, he feels that the December article "may have been a little over-critical of the railroads." Mr. Annin writes:

"I do not pretend to have the overall knowledge of the whole picture which Mr. Steffes enjoys and for which I give him unbounded respect. I admit that in many cases too much energy has been expended on the stepping up of speeds and improvement of equipment on main lines, with little or no consideration for cities and towns on back lines or subsidiaries. Many of these secondary lines could be given faster and better service, but not, I fear, to the extent which Mr. Steffee would like to see.

"The reason why such startling service cannot—or will not—be given is threefold, and by mentioning these facts I do not necessarily condone them. In the first

place, competition being the life of trade, the roads competing with each other or with rival methods of transportation that are unfairly subsidized use their high iron for their fastest, finest trains. The main lines almost invariably pass through the biggest cities, where the greatest revenue exists. It wouldn't pay to maintain another first-class stretch of track simply for one or two trains.

"Therefore, we find the best service where competition is hottest, which explains in part why the West Shore, parallelling its mother road, and with the added inconvenience of a ferry ride to Weehawken, its terminal, has only local service. However, it directly aids in high-speed operation over the Hudson Division by taking the slow freight off that line.

"The Boston & Albany, another NYC subsidiary, does not step up its schedules for the probable reason that it has a monopoly between Boston and the West —except for the Boston & Maine, which has to turn over its sleepers to the Central at Albany anyway. This also explains, at least to me, why the New Haven does not give any but local service—which, possibly, is justified by head-end business more than by passenger service—between Hartford and Blackstone and Boston through Willimantic.

"Secondly, the fact that the main trunk lines can run the high-class fast trains they do is partly an outgrowth of the very volume of business they handle on their high iron. With such volume they have, for example, enough mail and express business to warrant running straight trains of this class of traffic, thus relieving their fast passenger trains of this extra load and the prodigious layovers at important cities while a train does its head-end work."

In Mr. Annin's opinion, this situation might explain in part Mr. Steffee's criticism of the Pennsylvania's service to Williamsport. Both the lack of competition and the small revenue would serve to warrant very few trains. These would have to handle the mail and express, with attendant delays, because it wouldn't pay to run a straight mail and express train there nor maintain high-class track.

"Third and last," our Red Bank correspondent goes on, "is a fact which is disheartening but true. Much of the business which formerly sprang from the rural town and provincial city has been taken over by the automobile. There is no help for it. Neither streamlined trains or buses could ever bring such business back to the rails, because a lot of people like to drive their own cars."

Listen now to a one-time CNJ mudhop, Harry Cotterell, Jr., 36 Alexander St., Newark 6, N. J.:

"I had often wondered, prior to reading Steffee's article, why the New Haven didn't operate at least one crack train each way over its shorter and much-publicized Air Line through Middletown and Willimantic, thus providing those communities with first-class rail travel. One secondary service operated till recent years (at least till 1928) which Mr. Steffee overlooked was the old *Pittsburgh-Lehigh Express,* run jointly by the Pennsy and Lehigh Valley between Pittsburgh, Pa., and Phillipsburg, N. J., via Mount Carmel and Easton—an all-day trip featuring a diner and a Pullman parlor-car.

"Sorely in need of improvement is the Rutland's *Green Mountain Flyer,* a daylight train between New York and Montreal, operated via Troy, North Bennington, Rutland and Burlington. Once it sported several Pullman parlor-cars and a diner. Now it's little more than a cut of NYC or B&M coaches that get shuffled around in this comparatively short journey more often than a boxcar of hotshot freight does while on this same trip. I should know. I have made four trips on the *Green Mountain Flyer* in the last two years. Although this train does roll at a lively clip through Vermont, despite stiff grades and curves, something should be done about the numerous switching moves and ticket collections to which its passengers are subjected.

"The *Air Traffic Guide* lists nine daily flights between New York and Montreal,

Photo from R. H. Kindig, Denver, Colorado

SMOKE CANOPY above Articulated 3615 and Northern type 1803 darkens clear autumn tints on the hillsides as *The Scenic Limited* climbs famed Tennessee Pass near Mitchell, Colo.

with seven to and from Burlington, Vt. The Rutland had better wake up!"

George R. Kelly, 639 Parkway, Monessen, Pa., offers the following analysis:

(1) Passenger traffic can be made to pay. The streamliner idea of fast, inexpensive and convenient trains over long distances can attract enough new customers to make this business profitable.

(2) Passenger trains should be treated as a single unit rather than as a series of isolated cars pulled by a locomotive. A streamliner can attract passengers if it is sold to the public as a traveling hotel which offers chances for pleasant relaxation and recreation for the price of an inexpensive accommodation.

(3) Wartime developments in materials, techniques and equipment can be applied to peacetime operations to give the railroads a new type of service that is economical, fast, and appealing to the individual traveler.

Mr. Kelly quotes the results of a New York Central quiz of its passengers to prove that most travelers—at least on that system—prefer Diesel power, a subdued interior color scheme in the cars, radios in the cars, car temperature of 74 degrees or slightly less, non-smoking cars, all coach seats reserved in advance, and sandwiches, coffee, etc., sold on trains.

* * *

BOB WHITE, Grand Trunk Western king snipe, Saranac, Mich., writes that as long as there are railroad bridges, so long will some of them have low spots at the ends, regardless of the type of ballast. Usually construction methods are not at fault, according to Mr. White, for it is simply a case of two types of structures meeting, one of which is more solid than the other. For example, if you take a few rail lengths of softwood ties adjacent to a similar stretch of hardwood ties, the point where they join will be somewhat analogous to a bridge end, and by careful ob-

Photo by "Spec" Fowler, Schenectady Union Star

HIGHLIGHT of fan trip sponsored by Capital District R.R. Club, Albany, N. Y., over Fonda, Johnstown & Gloversville was 1900 vintage ride in open-and-combination coaches, complete with coal stoves, elaborate Pintsch gas fixtures and 4-wheel caboose

servation you can detect the difference.

"So far as my experience goes," he continues, "the type of ballast has little to do with the development of low spots at bridge ends, so long as the ballast is clean. It is easier to maintain the approaches with finer types, however, since with them you need less time to tamp the ties."

Much of the trouble with low spots at bridge ends is the result of scant shoulder on either the roadbed or the ballast, or both. If there is not enough ballast shoulder to support the ballast under the ties, no reasonable amount of maintenance will keep the track at the bridge ends. Also, if the shoulder of the roadbed is too narrow, the ballast shoulder cannot be maintained.

"This is a maintenance problem which may or may not be up to the section forces," Mr. White adds. "In the main, I do not consider that approaches to bridges present a serious problem if the foreman is alert, though under the best of conditions they do require a little more attention than the remainder of the track."

MICHIGAN CENTRAL, now part of the New York Central system, observed its centennial in 1946, because that was the hundredth year of its charter. However, according to Rufus P. Payne, 13974 Abinton Rd., Detroit 27, Mich., who sent us a lot of MC historical data, a Michigan Central predecessor known as the Detroit & St. Joseph dates back to 1832, making the line over 114 years old.

Dr. Milo M. Quaife, secretary of the Burton Historical Collection, Detroit Public Library, writes: "Until the advent of the steam engine no real improvement in methods of transportation had been made for thousands of years. . .

"The early-day engines were wood-burners and trains had no whistles or brakes. An engine was likely to run out of fuel anywhere along the line, when passengers and crew had to turn out to forage for wood and water in the adjacent ditches and fields. The rails were of strap-iron, whose ends coming loose from the stringers would frequently project upwards

through the bottom of the car, neatly impaling any passenger within range.

"When the first train entered Adrian, Mich., a man sat at its front armed with a broom to brush the snow from the rails ahead of the engine. At Dearborn a youth mounted his pony and, taking his stand a mile east of town, raced the first train into the station, easily winning the contest. In 1843, when the trains ran as far as Jackson, it took two Detroit citizens five days of strenuous travel to reach Chicago. Today one may make the journey by railroad in luxury and comfort in as many hours."

There's a mournful old legend of the Michigan Central that was popular among elocutionists of the 1890s. Here it is:

He had been sick in a run-down hotel for three or four weeks, and the boys of the road dropped in daily to see how he was getting along and to learn if they could do anything for him. The brakeman was a good fellow, an old head in Michigan Central passenger service who had somehow never gotten a promotion, and the men he worked with encouraged him in the hope that he would pull through.

Courtesy C&O, Pere Marquette and Nickel Plate Road

FLAGS, orchids and champagne marked christening of Pere Marquette's latest streamliner between Detroit and Grand Rapids

At first the doctor didn't regard his case as dangerous, but the other night the patient began sinking and it soon became evident that he could not last till morning. Three of his friends sat in the room. His mind wandered so much that he did not recognize any of them. It was near the railroad depot, and the rumble of drays mingled with the clank of yard engines, the bump of boxcars and the hoarse whistle of main-liners. It all sounded so painfully loud. The patient had been very quiet for nearly half an hour when suddenly he unclosed his eyes and shouted:

"Kal-a-ma-zoo!"

One of the men brushed the hair back from his cold forehead. The brakeman closed his eyes and was silent for quite a time. Then the wind swirled through the depot, banging the hotel-window blinds, and he lifted his hands and cried out:

"Jack-son! Passengers going north by the Saginaw Road change cars!"

The men understood now. The oldtimer thought he was heading east on the Michigan Central. The effort seemed to have exhausted him, for he lay in a coma the next five minutes, and a watcher felt his pulse to see if it still fluttered. A tug steaming down the river barked her raucous whistle loud and long. The patient opened his eyes with a cry:

"Ann Ar-bor!"

He had been over the road a thousand times and more but had made his last trip. The watchers knew that a special train bound for Eternity was racing over the old track. From afar came the peremptory call of a locotive whistling for the board. The dying brakeman intoned:

"Yp-sil-anti! Change cars here for the Eel River Road!"

Dampness collected on his forehead. A watcher murmured, "He is coming in fast."

The slamming of a door startled him again, so that he moved his head to one side and faintly said:

"Grand Trunk Junction! Passengers going east by the Grand Trunk change cars!"

After that he lapsed into a silence so deep that the men standing around looked at one another as though the end had come. At length the brakeman feebly lifted a hand, moved his head again and whispered, "De—"

Not "Detroit" but "Death." The word was never finished. To the watchers it seemed that the cold white headlight of Death's engine was shining full on his pallid face.

* * *

NEW MOVIE, *Rolling the Freight,* with sound effects, tells the story of handling merchandise in Chicago & North Western yards and terminals. Designed for audiences ranging from high-school students to freight traffic men, it is black and white film, size 16 mm., and is available as a loan to certain groups by contacting the C&NW public relations department, 400 W. Madison St., Chicago. The film graphically describes and pictures operations in Proviso, the world's largest freight classification yard, and other Chicago facilities.

* * *

ABANDONED but not dismantled was our designation of the Erie's Ringwood branch in an article telling about this branch, entitled "Erie's Emblem" (Jan. '46).

"The Erie has a good reason for not dismantling it," writes David Chase, 360 N. Clinton St., East Orange, N. J. "There is still plenty of good high-grade iron in the mines around Ringwood, which, however, is hard to get out. During the recent war the Government reopened those mines and now has them up for sale. Visiting Ringwood the other day, I found the Midvale-Ringwood tracks in fair condition and the mine spurs newly reballasted, but all the tracks leading to the mines, except Peters Mine, have been torn up."

* * *

LONG-LOST TOWELS, one missing for thirty-two years, another of 1910 vintage, have just been returned to Pullman Co. headquarters in Chicago to augment the current supply of 2,270,000 Pullman towels which is occasionally depleted by thieves and careless travelers riding the rails.

With one was a handwritten note stating: "Believe it or not, I am coming home after thirty-two years in Cedar Rapids, Iowa"; and with the older one was this comment from the owner of a well-known Eastern resort: "If I remember correctly, some of our guests left this towel here, marked '1910 Pullman 1910,' and it has never been used since." Pullman officials hope this is the start of a trend to honesty and the recovery of other vanished property.

* * *

EXTREMELY RARE in these days are locomotives named for railroad men; so it is news when the Jersey Central Lines has a new Baldwin 2000-hp Diesel-electric christened by Miss Doris Perkins, 1709 F St., Belmar, N. J., as the *Frank J. Perkins* in honor of her father, CNJ trainman and U. S. Navy boatswain's mate who was killed in the D-Day invasion of Normandy. The engine was placed in operation last November 19th, the first time that such type of motive power has ever been used in American commuter and suburban service.

"Besides providing cleaner, faster and smoother rides," reports Joseph T. Sullivan of CNJ, "the new Diesel-electric marks the initial step in providing the Jersey Central with the most modern system of electrification. This system cannot be thwarted by the elements, for neither storms nor ice interfere with operations as they do on electric lines using overhead or third rails."

* * *

SMITHFIELD, Va., a small town famous for its hams, is going to get a railroad for the first time in history, we learn from William B. Gwaltney, 2808 Kimball Terrace, Norfolk, Va. The ICC has authorized Smithfield Terminal Ry. Co. to build a line in Isle-of-Wight County and to operate car floats across the James River between the trackage and

Newport News, C&O terminal. Approximately 3500 feet of track will be laid, including sidings to the principal Smithfield packing houses.

* * *

RETIRED ENGINEER William E. Butler of San Diego, Calif., writes that "Willy's First Trip" (Aug. '46) brought back vivid memories of what Bowie, Ariz., was like in the early 1880s.

"That was where I landed my first job of firing on the Southern Pacific," he recalls. "I was one of the helpers there with the late Engr. C. W. Wilcox, when east- and westbound passenger trains stopped for dinner in front of Capt. Texis's hotel and saloon.

"On the bar of this saloon stood a glass contraption, about eighteen inches long by fifteen high, consisting of a barrel suspended within a barrel. The outer barrel was filled with medium-grade whiskey, in which were deposited a desert rattlesnake, a sidewinder, some scorpions, and a centipede or two. These reptiles, plus the fact that the cheap liquor was dark, completely hid the inner barrel from view. The latter contained a better-quality whisky, with a small glass tube and faucet. When passengers from a train called for whisky, Tevis would shove a small glass across the bar, remarking: 'There's the barrel; help yourself.'

"Some would draw off a drink and gulp it down without noticing what the outer barrel contained. Others would get the drink in hand and their gaze would light on the outer barrel and its contents. Then they would leave the glass unsipped on the bar and walk away, realizing the joke was on them. Still others would not inspect the barrel until after they had swallowed their liquor. What happened then could not be described fastidiously."

Mr. Butler says that at Tucson, Ariz., when he first hit town, the 25-cent piece was the smallest coin in circulation; nickels and dimes, which arrived later, were accepted grudgingly; and pennies nearly caused a riot—the post office was the only place in Tucson where you could spend them without a protest being made.

"MILEPOST" PAUL McGUIRE, Santa Fe section boss of Fairfax, Okla., tells this story about Leroy Hood, a farmer living near his town. It seems that Mr. Hood received a contract in 1945 to restore grade shoulders along the Santa Fe's Pawhuske branch, and bought a span of big mules that demonstrated their understanding of the job on the very first day. When their Fresno scraper full of dirt was dumped on top of the high fills those animals would promptly turn and walk down the fill toward the barrow pit, no matter how steep or rocky the new path might be. The other teams would drag the empty Fresno to the end of the fill, or at least to a slide where the going was smooth.

Those big mules were so wise and gentle that the youngest schoolboy on the job could drive them. By taking short cuts and stepping faster they did far more than their share of the work. They wasted no time by stepping over the traces. In fact, they could turn completely around a scraper without getting tangled in the tugs, and knew when to pull hard and when to wait for a rock to be removed from in front of the Fresno.

Several oil-field workers recognized this pair of hay-burners as Old Kate and Joe, who had graded the townsite of Cushing, Okla., before 1914. They had also helped to build the grade into that town for the oil fields and the Santa Fe in 1915, and had been engaged on public work from then until Mr. Hood bought them. There is little doubt that these experienced mules are more than thirty years old.

When Mr. Hood was short-handed a driver, he would turn these old jugheads loose on the right-of-way to graze during working hours. They never strayed away, but invariably returned to the wagons at noon and night, along with the work stock, for their quota of oats.

One morning Old Joe got in the center of the track just ahead of the local freight train and stayed there for almost a mile until he arrived at some fine blue-stem grass on a spot where they had worked a few

days before. The returning local and the 12 o'clock noon approached that location at about the same time; and Old Joe was up in the center of the track again, trotting back for his measure of oats. Short jerks of the locomotive whistle cord and continuous ringing of the bell didn't frighten him any more than they had in the morning. He made it back to the feed wagon in a dead heat with the noon whistle, with the puddle jumper straggling along behind.

When the engine passed Milepost McGuire, the hoghead was choking and sputtering as he yelled: "You'd better keep that damn mule off this track or blah, blah, blah. . ."

McGuire shrugged his shoulders. "Do I look like a mule-skinner?"

The hogger's reply was unfit to print.

* * *

"WHAT is it about railroading?" asks E. B. Overshimer of 5202 Magnolia Ave., Chicago. "Whatever it is," he goes on, "it causes acute nostalgia in the minds of old-time railroaders. In my case, it's long since I carried the bills on the old Panhandle, Greenline Division. After loafing around yard offices and round houses, chewing the fat with cons, shacks, yard geese and hogsheads for a few weeks after the road decided it could get along without me, it didn't take a call boy to awaken me to the fact that if I wanted any more pay days I would have to get busy. So I decided to reverse my long practice of having a strong back and a weak mind and make a fortune or call out the wrecking crew. With that determination I grabbed an opportunity in the business of promoting, building and operating Independent Telephone Exchanges. In the manufacturing of telephone equipment, I realized my ambition.

"You'd think all this would have made me forget I was ever a railroad slave, but I still have so much car grease in my system that I'm continually imagining trips over the road. And to this day the sound of a far-off and mournful locomotive whistle gives me such a dose of nostalgia, I can almost taste it!

"Recently, while attending a convention of the Telephone Pioneer Association in which several thousand of us are members on a yearly dues of three dollars each basis, I thought how wonderful it would be for old-time railroaders to organize a nation-wide Railroad Pioneer Society. There'd be yearly get-together meetings where we could renew old friendships, keep track of each other, swap experiences, and eat ourselves out of shape at a big banquet. What a glorious good time for us of the link-and-pin, no-air-on-the-box days!"

What about it, railroaders? Mr. Overshimer's idea is to have a non-profit organization, the officers to be selected by the members and to serve without pay. The dues would be used to maintain a national headquarters, defray convention expenses and, possibly, get out a yearly booklet listing the names and addresses and containing the pictures of the members.

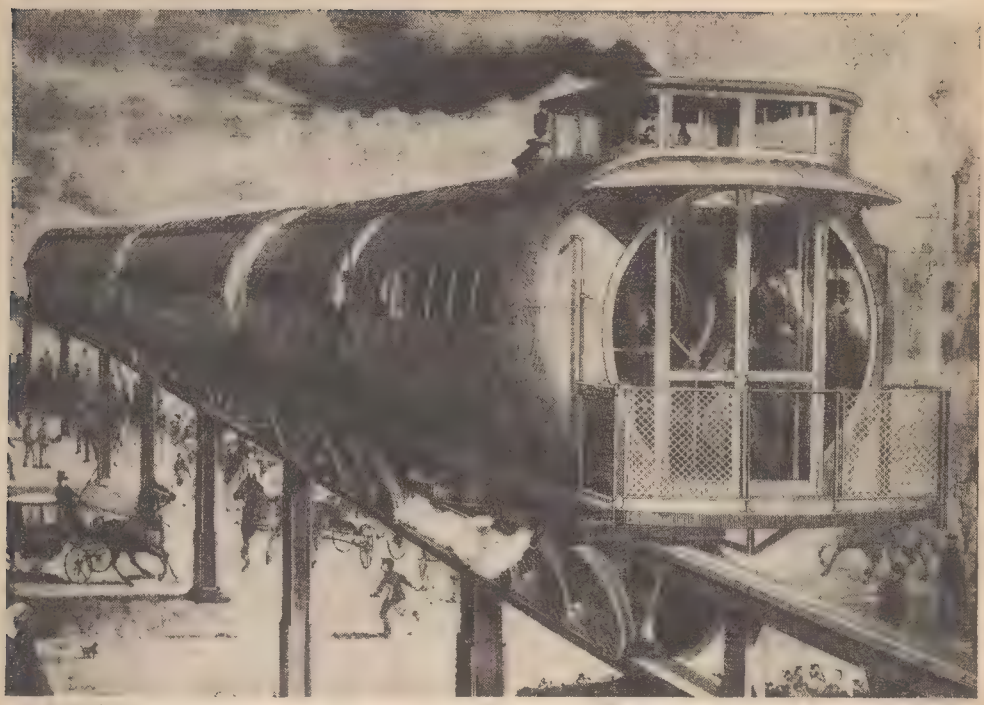
"If enough of the boys are favorable," he writes, "I'll find the time to help form the Society, and will carry on in securing charter members at my own expense until such time as the Society could defray the cost of such work. My idea is to have railroaders of every capacity eligible for membership. I sure would like to hear from old-timers as to what they think of the idea."

* * *

BOXCARS, like dwellings, are still on the scarcity list. There just aren't enough boxcars in America to meet shippers' needs. For that reason it is likely that the present pooling arrangement will continue until a lot more of them can be built. In August, 1943, the number of serviceable boxcars in the country was 724,579, but since then the total has declined by nearly 25,000.

During that period some rail systems, including the Santa Fe, actually increased the number of boxcars they owned so as to keep abreast of war needs and prepare for peacetime reconversion.

"Yet today," the Santa Fe president, Fred G. Gurley, comments sadly, "because of pooling, neither the Santa Fe nor



ARTIST'S conception of Meigs' monorail system. Experimental model was built in Lowell, Mass., sixty years ago

its shippers enjoy the benefits of this planning. Less than one-sixth of the company's class A boxcars are under its control. The rest are circulating in a nationwide car pool."

Moving approximately forty percent of the Southwest's wheat, the Santa Fe builds a better-than-average type of boxcar suitable for grain handling. Yet when the 1946 wheat crop started for market, more than seventy-seven percent of the Santa Fe's boxcars were on "foreign" lines. To replace the missing ones, the company drew from the car pool rough boxcars of every kind and ownership. This equipment often needed coopering or repair, which involved costly delay before loading. The situation, in Mr. Gurley's opinion, is "highly damaging to the Santa Fe."

* * *

UNUSUAL HOBBY of Edward Michel, Louisville & Nashville switchman, 1209 Gallier St., New Orleans, La., is making miniature replicas of Roman Catholic altars, along with other woodwork such as children's toys, including a detailed model of a railroad handcar. Altars are his specialty. Over a period of seven years he has fashioned about four dozen in his spare time from salvaged wood of old apple crates, furniture boxes picked up along the road, etc. Most of these miniatures he has given away to relatives and friends; a few he has sold. The shrines are minutely accurate and, at a distance, resemble the full-scale Carrara marble originals. Edward says he follows this craft because he loves what the altars mean to him.

* * *

NAMEPLATES for American passenger trains, somewhat similar to those attached to the sides of British locomotives, are suggested by R. K. Barnes, Illinois Central baggageman, Chicago Terminal Division, Chicago, Ill.

"Often while on duty I have waited, on a Chicago suburban depot platform with several passengers around me, for an outbound train," he writes. "Down the track she roars, headed for the trainshed down-

town. She doesn't stop at our station. The fireman highballs as they rush by. She consists, let's say, of four head-end cars, about five coaches, a diner, a lounge car and three sleepers. To us on the road she is just No. 4, but I am sure that to many of the people standing near me on the platform she is somewhat of a thrill. It isn't every day that the ordinary person stands on a depot platform; and when he does, the swift passing of an express train must give him a feeling of pleasurable excitement.

"As the last sleeper passes, we observe nothing but a vacant vestibule. Once in a while the hind man waves a highball, but not always, because it isn't required at this suburban station. Various bystanders turn to me with such questions as: 'What train was that? Where is it from? How fast would it be traveling?'

"Of course, if a person will go to the trouble of looking in the right timetable he will find, in small print, the name of that train. But how many are likely to do so? Why shouldn't every passenger train carry a nameplate? If she doesn't have an observation car, let it be hung on the back gate of the last car, above the buffer, and lighted at night. It is not enough that names be given to a restricted number of 'famous' trains. Why not make *all* trains better known to the general public?"

* * *

AN ELDERLY LADY who had boarded a New Haven train one day last November at New Rochelle, N. Y., proffered her fare to the conductor, saying, "I didn't buy this ticket today." The skipper glanced at the date and agreed with her, but accepted the ticket anyhow, because there was no time limit on usage at the time it was issued: *September, 1898.*

* * *

THE ONLY PASSENGER ever rejected by the Gulf, Mobile & Ohio was a five-day-old baby whose mother attached his feeding hours and milk formula to his traveling crib and attempted to send him to his father at a station farther up the road.

"FREIGHT TRAIN" is the title of a poem by Frederick Ebright from the Washington (D. C.) *Star:*

Slowly and wearily the train crawls along the tracks
Like an ancient and lumbering tired old beast:
Flatcars and black gondolas, tank cars, boxcars,
From somewhere in the West, going somewhere East.

Great Northern and Union Pacific, B&O, Santa Fe;
Cattle cars and mountains of sulphur, heaps of gray shale,
Lumber and grain and black oil: This is the life blood
Of America coursing forever through her veins of rail.

Chicago, Rock Island, Seaboard, Atlantic Coast Line;
Sun-faded maroon and grimy brick-red of old cars;
They have waited in sidings through the rains of the years.
They have ridden night upon night under prairie stars.

The wheels clack wearily eastward; at the end of the train
The brakeman watches the land with inscrutable eyes;
Once more the ragweed and jimson spring up in the tracks,
Green and eternal, triumphant in cinder-filled ties.

* * *

WHERE ARE the long excursion trains of yesteryear? Luther Reed of Orwigsburg, Pa., would like to know. Mr. Reed recalls seeing in 1920 a Lehigh Valley excursion that ran in ten sections of ten to twelve cars each from the Easton-Mauch Chunk area of Pennsylvania to Niagara Falls, N. Y. Ten engines were required from Easton to Mauch Chunk, ten more to doublehead to Mountain Top, and a change of locomotives required ten additional.

"I was in Wilkes-Barre that night," he tells us, "and watched several of the sections pull in. I remember hearing a trainman say there were ten altogether. Sev-

eral of them started on the Mahanoy and Hazleton Division, as it was called then. Since it was the first excursion to run to the Falls from that vicinity in years, excursions having been cancelled during World War I, the patronage was so great that many people could not be accommodated and were left at the stations. But the excursion was repeated later to give those folks a chance."

* * *

STEAMSHIP employes, as a rule, are not covered by the Railroad Retirement Act, even though there may be some connection between the steamship companies and certain railroad companies. On the other hand, employes of railroads working on tugs, barges, lighters and marine operations directly connected with railroad are covered by the Act.

This answers a query from a woman who had read Ralph Gross's article, "More Security for Railroaders," in our November '46 issue. The woman, Mrs. L. B. J. of Washington, D. C., had been connected for 20½ years with a steamship company owned and operated by two railroads.

* * *

BOILES FAMILY record (*Along the Iron Pike,* Nov. '46) is matched by J. W. Aldridge in the following record of relatives employed as telegraph operators in Colorado.

Walter Aldridge, now deceased, worked for the Southern Ry. many years. His brother, J. O., was D&RGW agent at Fountain. J. O.'s wife, Annie L., now retired, worked for the D&RGW eighteen years. Walter F., son of J. O. and Annie L., was a D&RGW relief operator at Pueblo Junction. J. W. himself, a cousin of J. O., is D&RGW agent at Texas Creek, and J. W.'s wife, Ellen, is a relief op on the D&RGW, Pueblo Division. Thus four Aldridges are now on that division's seniority list.

Last month's *Along the Iron Pike* carried a picture of a Santa Fe depot of strange design at Patton, Calif., with a request for information about it. M. C. Blanchard, AT&SF chief engineer, Los Angeles, Calif., supplies the following:

The Patton depot was designed in 1898 by B. F. Levet, Sr., retired, while working under Fred T. Perris, chief engineer of the California Southern (now AT&SF). Mr. Levet was instructed to design a building that would be different from ordinary railway architecture; so, in an effort to make the new depot fit into the motif of the State Asylum, he drew plans for the present station, which was originally named "Asylum" but later changed to Patton. Part of the rotunda was built beyond the line of the rest of the depot to give the operator an unobstructed view of the track. Mr. Levet designed many early depots of the old California Southern, including the LeGrande depot in Los Angeles, which also had a rotunda and tower.

* * *

ODDITY. John Mitchell, secretary of Missouri Central Model Railroad Club, 360 S. Taylor Ave., Kirkwood 22,

TOPS FOR QUALITY
BIGGER AND BETTER

Mo., sends us a Missouri Pacific (not model) report on 17 engines out of service at the St. Louis back shop and roundhouse last October 9th. The list includes Nos. 1202, 1502, 6602, 7002 and 9102—five engine numbers ending in "02." Does this set a record?

* * *

GAELIC SPECIAL. "It was a great day for the Gaels last September 20th when the New York Central *Cayuga,* No. 163, pulled out of Grand Central Terminal with four Pullmans bearing the names *McIntyre, McFarland, McGurk,* and *McSweyn,"* writes Rev. John S. Williamson, St. John's Rectory, Sodus, N. Y., who rode *The Cayuga* that night. "Why these particular cars were on the same train I do not know."

* * *

EXTENSION of the Pacific Great Eastern Ry. into the Peace River district of British Columbia, Canada, may depend upon the outcome of a provincial survey of coal deposits in the area, reports Walter Thayer, Box 1588, Chelan, Wash. Latest indications are that deposits may be even greater than preliminary data suggested.

* * *

SHORTEST PIKE. Endless controversies have raged in *On the Spot,* in switch shanties and crew rooms over the old question, "What is the world's shortest railroad?" for the men of steel and steam do like to argue.

A strong contender for this honor was the South Easton & Phillipsburg RR. of Pennsylvania, which extended over the Delaware River from the Pennsylvania-New Jersey state line to meet the Lehigh & Susquehanna at Easton, Pa., a total distance of .13 of a mile. This brief stretch of track, according to Robert I. Huyler, secretary-treasurer of the Lehigh & Hudson River Ry., Warwick, N. Y., was laid in 1889 for a railroad bridge in conjunction with a similar line, the South Easton & Phillipsburg RR. of New Jersey, .16 of a mile, connecting with the Pennsy. Both tiny roads were operated by the L&HR for about twenty-three years but were not consolidated with it until April, 1912.

* * *

LAST STOP is the Reader's Choice Coupon *(page 145),* which guides your editorial crew in selecting material for future issues of *Railroad Magazine.*

Some readers use the coupon. Others prefer not to clip the magazine; they send home-made coupons, postcards or letters. Regardless of how votes are written, all count the same. Results of balloting on the January issue show these titles listed in order of popularity:

1. Strange Special, *Comstock*
2. Narrow-Gage Glory Days, *Lathrop*
3. True Tales of the Rails
4. Hartwell Railway, *Monroe*
5. The Barlow Plan, *Gross*
6. On the Spot
7. Light of the Lantern
8. Electric Lines, *Maguire*
9. Locomotives of the Maine Central, *Boothby*
10. Grievance in Grub, *Rohde*

Most popular photos: 24-25, 26-27, 44 and 135.

* * *

ONCE A RAILROADER, always a railroader—even when you are off duty, seated on a Louisville & Nashville trestle at your ease and fishing in Escanaba Bay at Pensacola, Fla. While engaged in this form of recreation recently J. J. Brown, L&N fireman, let his gaze wander to the track and observed two rails separated at a joint by about four inches. Brown promptly notified the assistant division engineer's office, a potentially dangerous condition was remedied, and the fireman-fisherman was officially commended.

* * *

CORRECTIONS: John P. DeCamp, public relations director, University of Cincinnati, Ohio, who says he enjoyed every word of Gilbert A. Lathrop's article, "Narrow-Gage Glory Days," (Nov. '46 through Jan. '47) and is familiar with the Colorado area it covers, points out that the Crystal River RR. ran from Marble

to Carbondale, not Glenwood Springs as was stated in our November '46 issue, and was standard gage in 1916 and '17, the years Lathrop refers to. From its Redstone station to Coal Basin ran the narrow-gage Coal Basin RR., abandoned about 1917. Possibly the three slim-gage engines that Lathrop mentions as bought by the D&RG were Coal Basin power.

Tom Annin recognizes Boston & Maine engine 3667 on page 110, bottom photo, December '46 issue, which by a typographical error we captioned "2667."

NYO&W engine 169 was mistakenly labeled "189" in our January '47 issue, page 136, reports M. J. DePuy, 204 Sherman Ave., New York 34, N. Y., adding that the photo's age is shown by the presence of only two wires on the telegraph pole's crossarm. He identifies the locomotive pictured on page 127, same issue, as No. 70.

C. C. Campbell's inquiry about a Monon freight wreck (Dec. *On the Spot*) should have read "Leipsic, Ind.," instead of "Leipsic, O."

* * *

BRASS BAGGAGE CHECKS from any railroad station are wanted by Elton M. Eversole, retired railroad man, 929 S. St. Johns Ave., Highland Park, Ill., who is credited with owning the world's largest collection of switch keys.

* * *

ONE OLD-TIMER to another. E. L. Olcott, 3409 S. Hanna St., Ft. Wayne, Ind., wants to ask Mr. C. C. Campbell of 207 S. Edison St., Tampa, Fla., when the CI&L (Monon) ever ran through Leipsic, Ohio. He thinks our correspondent confused the Monon with the old CH&D which did run up through Ohio in that general direction and was more or less intimately connected with the Monon. He continues:

"I was raised almost within spitting distance of the Monon right-of-way through Indianapolis and went to college on the other half of the X that the Monon makes over the State of Indiana. To view a Monon train was always like old home week, since most of the power was built way back when. The poor old thing until recently—and due thanks be rendered—was the victim of split ownership and if a dime was spent by the owners it was a miracle. Some of the engines I saw when grey haired were the same jobs I saw in knee britches—only reworked.

"I'll say this about the Monon—any time you were called on to eat in transit you got a real meal especially on the *Hoosier* where they handed you the menu with the late Bill Herschell's 'Ain't God Good to Indiana,' on the cover and wherein always lay a gastronomic treat—believe me! And Fred Harvey can climb a tack for all of me, too.

"As to the other fan who asks about the CH&D, I can sure say he knows his engines. Those CH&D jobs were about the prettiest things on the road—with silver tired wheels and all that. My best buddy, now dead, had a grandfather who wheeled one of them until retired and that road brings back nostalgic memories, because

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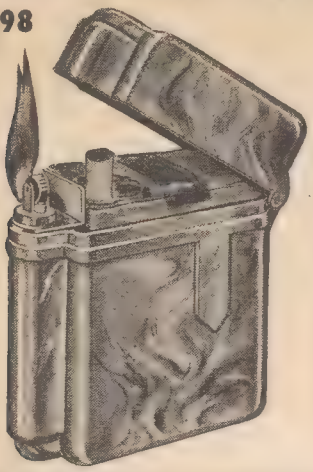

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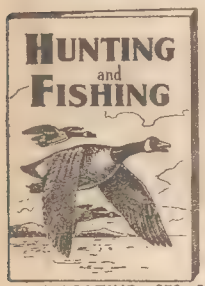

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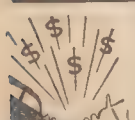

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if there was a CH&D engine I didn't know intimately it was because it never showed up in the round-house in West Indianapolis—and that includes the Christmas Tree job he spoke about.

"Wonder if he remembers the ID&W (Indianapolis, Decatur & Western), predecessor of the CH&D? Also, does he remember the old Leave Early and Walk (LE&W) in the days when varnish was the rule and not the exception up through Kokomo? As for me, I even remember the Corn Beef and Cabbage (Chicago, Bluffton & Cincinnati), as well as the time when the old collar stack locos ran on the JM&I to Madison, Ind. Folks went down there to see the grade, said to be the steepest non-cog rail grade in the United States. Today the Pennsy timetable for that stretch of road which used to run many a long excursion train to Madison reads 'Freight Service Only.' Incidentally, that road is said to be the oldest railroad in the State of Indiana and the cause of the State Constitution being changed to allow no indebtedness on the part of the State of Indiana. It seems that the state went broke paying for canals, abortive railroads and so forth. I have a piece of script issued at that time. Some of my forebears must have had a powerful belief in rails for they bought it for good money and today it is worth nothing. I also possess a Clergyman's Pass issued back in the '80's to my grandfather."

Turning to A. J. S. McNickle's letter in our November '46 issue, Mr. Olcott says, "Your talk about old rails doesn't fall on deaf ears because I have some friends who are just that and I should like to nominate one of them for the champion rail liar of the world.

"The old guy has long since ceased to have any more than a checking interest in the iron pike but his stories are as tall as they come and just as amusing as it is possible to make them. Only the other day I cornered the old codger and invited him up to the Disabled American Veterans for

whatever he wanted and a chat. I told him that I had just come in from Columbia City, Indiana, in the bucket of bolts I call an automobile and that just outside of that city where the highway is four lane and open for what you can do, I was looping along just a wee might over one in one when I heard the multiple crack of an exhaust behind me and a Pennsy 4-4-4-4 shot by with a string of varnish so fast that I couldn't even get the name in the keystone on the last car.

"It was really *some* hog, I opined.

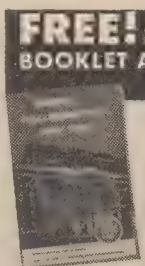
'Shure and 'tis some hog. Some hog it is—but it aint loike the one I handled wanct,' he began.

"Right there his drink began to pay for itself and I leaned back to listen.

'Ye mind ye're a young bucko, ye are, and vetrin and all, shtil ye're too young to be mindin' of the auld days whin riding the rails was ridin' the rails and whin thim hogs ye're seein' to-day wux but pigmies. Now Oi mind the time I was wurrkin' for the auld lumber companies up Minnesota way, ye mind, whin we had thim hogs that w'ud be makin' pigmies of thim 4-4-4-4 things ye've jist been shpeakin' av.

'The one Oi had—twuz designed by me and the master mechanic av the road, ye mind—had so minny power wheels on the side av her that she remoined me av one of thim spool boxes to the dry-good shtore. Wheels, wheels and more wheels and all—moind ye ALL connicted up wit' a rod twict the soize av a man's leg. Faith, an' it tuk a gallon av 'ile fer each connicshun an' me talley pot got 'im a set av bow legs totin' the 'ile to do the 'ilin'. The schmoke box was av sich size that twuz nawthin' uncommon fer the bosses to throw banquits in thim and there was room fer the whole av the managemint an' the ten naygurs doin' the cookin' and the servin' av thim. Ye see, me bucko, twuz warrm in the schmoke box and twuz cold outside.

'Two fire-boys we had fer the grates wuz that size that to kivver thim complate wit' a good fire tuk a full hour av stiddy wurrk by the both av thim. The tank wuz



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that long that we didn't use shovels ner scoops; there wuz a complimint of four hand-barrows which wuz rotated. One of the fire-boys wud load an the other trundle thim. Were it not so, over-time we'd be payin' fer the walking and no shteam we'd be having fer the lack of foire.

'Came the day whin complaints wuz bein' received b' th' management consarnin' the coal shmoke en the cinders. T'wud appear as though we'd t'rown out some hunks of flamin' coal that had shtarted conflagrashuns and by the same token had schmashed in buildin' tops but the company wuz loadin' and loadin' and the movements had to be done. Already 'twuz common t' foind the drag so long that the head ind wud be in Duluth afore the rear ind got shtarted good and it tuk all av the yard ingines the road had to handle the train.

'With the complaints come improvmints. The master mechanic and me good silf invinted the oidea av using some av the ice in a sartain lake which hed burnin' properties instid av coal en wood. We loaded the tank wit' the ice and it wurrked beautiful. No shmoke came out! No huge cinders smashed the town hall—but—ah, wurra, wurra! Twuz not to be. Instid av shmoke en cinders the soize av a cab shpittin' out we wuz t'rowin' water over the landscape. We put out sivin forest fires and a minor conflagration involvin' a saw mill complete but we flooded the Mississippi River and washed out the whole railroad, be Dad!'

"The old fellow bummed a light and sucked on his pipe thoughtfully.

'And what became of that giant hog?' I asked.

'Twuz washed away—blue-prints and all in the ensuing flood. Nivir has it been dewplicated—nor nivir will be. The lake av the flamin' ice was washed away too. Ah, me! But nivver, me young bucko, shpeak of thim large injines in me presence. 'Tis pigmies they are!' "

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ITEMS sent to the *Switch List* and *Model Trading Post* are published free, in good faith, but without guarantee. Write plainly and keep 'em short. Use a separate sheet or card containing your name and address.

Because of time needed to edit, print and distribute this magazine, all material should reach the Editor seven weeks before publication date.

Switch List

DICK ANDREWS (*), Box 569, Wayne, Mich., collects trsfs., will swap hundreds Detroit area, others. Wants old Mich. St., Texas, Colo. trsfs., good cond.

(R) FRANCIS J. BANDI, 1204 No. Madison St., Bloomington, Ill., will swap Alton and B&O eng. pix and Alton emp. tts. for unclipped back issues *Railroad Magazine. Trains:* 3 pix ea. mag.; 1 tt. for 2; or sell size 116, few 122 pix 5¢ ea., tts. 27c ea.

(*) DON BARINGER, 300 Park Ave., Goshen, Ind., has size 616 elec., Diesel pix, Ind., some old, Ontario 6c ea., 53x32 in. map, elec. lines U. S., Canada '45, $1. Wants pix St. Joseph Valley Trac., Int. tts. of Ind., Mich.; *Off. Guide* before '30.

(R) LEE BEAUJON Canaan, Conn., offers *Railroad Magazine,* Apr. '43 to Nov. '44; Feb.-Nov. '46; singly or lot; *Trains,* Apr, May, '45; Apr.-Nov. '46; 1860 *Gazeteer of N. Y. State; P&R Rulebook* 1892; *PR&NE resort book,* Wants Erie, NH, CNE data, etc.

JACK BECHER, 2533 Lynn Ave., Dayton 6, O., wants Southern, L&N, TC, CRR, CG, ACL, NC&StL, C&O, C&LE negs. not larger than size 124. State price.

(R) O. P. BECHER 331½ S. Hill St., Los Angeles 13, Calif., will sell *Railroad Magazine* '30 to '46, 25c to $1 ea.; also *Railroad Man's Magazine* Feb.-May '11, bound; 120 issues *Railway Age,* '20, '28, '29, '32 for best offer.

LOUIS C. BERNDT, Box 102, Garden Prairie, Ill., will sell 15c ea. p.p., C&NW 13 ords. 1896, or trade for old Ry. pix.

DUNCAN L. BRYANT, 622 South Pleasant St., Princeton, Ill., wants tinplate tr. catalogs before '30.

(R*) JOSEPH CARTER, 502 10th Ave., Huntington, W. Va., must sell at once, reasonable price, *Railroad Magazine* '40 to '46, 3 missing; *Model Railroader* '44; *Trains* '45 exc. Sept.; *Interurbans* '45, '46; transit maps.

JOHN S. CLEMENT, Box 13, Knobnostor, Mo., wants builders pix B&M 2-8-4, 400 class locos.

(R) E. M. COX, 4916 S. Crenshaw Blvd., Los Angeles, Calif., wants *Railroad Magazine* Dec. '30, May '31; *Trains,* bound volumes 1, 2, 3, also Nov., Dec. '40; Jan., Mar., June-Dec. '41; Jan.-Apr., Oct., Nov. '42; Mar., June, Aug. '43; May, Oct., Nov. '44; Mar. '45; also loco book ends. Will pay cash or swap desirable models.

(*) DONALD DUKE, 2304 Melville Dr., San Marino 9, Calif., wants to correspond and trade route maps, tts., trsfs., other elec. material.

ROBT. ELLISON, 418 5th St., Petaluma, Calif., will send new list tts., emp. tts., tokens, etc., for stamp.

ROBT. H. FLACK, 518 Nancy St., Charleston, W. Va., has colored p.c.'s rr. scenes, LV, NYC, CB&Q, tr. ords, to trade for colored p.c.'s, rr. pix. Swap lists.

(R) JOHN GAYDOS, 1437 Gregory St., Chicago 40, Ill., has over 200 *Railroad Magazine,* 10c ea. or trade for O-gage items. Wants Los Angeles area correspondents.

JOHN M. GRAHEK, 932 W. Euclid, Detroit 2, Mich., has new list NYC tr. pix.

RICHARD GROLIUS, 4929 N. Merrimac Ave., Chicago 30, Ill., has tr. ords. to trade for others; also emp. tts., trsfs. Wants to hear from Vernon L. Hall.

C. A. GRUBB, Brocton, N. Y., wants old steam, gas trac. eng. catalogs, old gas eng. catalogs.

(R) S. P. GUTHRIE, Cold Spring, Ky., wants to buy *Railroad Magazine* Dec. '29, Jan. '30; *Trains,* Dec. '40, Apr., Nov., Dec. '41, Jan., Feb. '42; also buys pix ET&WNC Lawndale Ry. & Ind. Co., T&NC, Black Mtn. Ry. Has few short line negs. to trade; will sell pix O&W, Tenn. RR., size 620, 122.

(R) EDWARD D. HARMER, 1001 S. Burdick, Kalamazoo 32, Mich., will sell *Railroad Magazine,* in one lot, 10c each., Feb., Nov. '38; June '39; June, July '40; Mar., Apr. '42; June, July, Nov. '43, 60c; Jan.-June,

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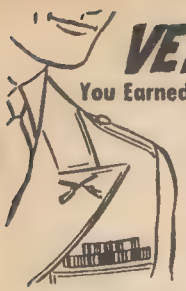

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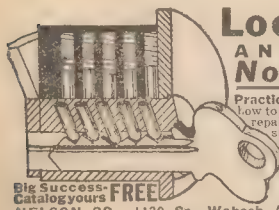

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JOHN HARRIS, R. D. 1, Box 28, Lincoln University, Pa., will sell size 116 Rdg., PRR, B&O, CB&Q, B&M, short line and n.g. loco pix: 35c doz.; 3 doz. $1; 500 for $12.50. Trades PRR negs. for all rds.

(*) ROBT. E. HEGLUND, 1213 Grant St., Waukesha, Wis., wants info., pix C&LE; Felicity & Bethel elec.

(R) IRVIN C. HINZE, 123 N. 64th Ave. NW., Duluth, Minn., offer *Railroad Magazine,* Dec. '29 to present date, good cond., to top bidder.

WM. HITCHCOCK, 76 Curtis St., West Somerville 44, Mass., wants any size pix, Southern streamline Diesel engs., esp. between Louisville, St. Louis; L&N line; also pix Florida rr. Wants to hear from Florida Rail Photo Serv.; Ill. Central, PRR, CB&Q, CA&E fans.

DICK HOWELL, 500 S. Grant, Crawfordsville, Ind., wants tr. ords., pix, all rds., esp. Mormon, NYC, P&E, B&O, NKP; has size 116, 127 pix to trade. Write for list.

ARTHUR B. JOHNSON, 1072 E. Commercial St., Springfield, Mo., sells size 116 loco pix, 20 for $1; Frisco, AT&SF, CN, CP, others; List, 2 samples, 10c.

H. L. KELSO, Box 4846, Florence Br., Los Angeles 1, Calif., offers 10 assorted steam or electric prints, sizes 120 to p.c., any place, state pref. New colored pc. ARA blotter with ea. ord., 25c coin or stamps.

(R) MAURICE L. KUNDE, 714 South 5th St., Brainerd, Minn., has over 100 issues *Railroad Magazine* for sale, 35c each., p.p., good cond.; also trades, sells size 616 loco pix, negs., most rds. List, sample 10c.

ROBT. KUNZE, Harvey, Ill., will buy NYC., PLE, IHB, AT&SF loco tr. pix, ann. passes, new, old.

KENNETH B. LANGILL, 4349 Washington St., Roslindale 31, Mass., wants to buy or trade any rr. tkts., passes, etc., esp. short or abdn. lines; has many pix size 616 BM, McC, NH, BA, NYC for trade; any tkts., any form trans.; also branch lines of major rr's.

CHAS. R. LLOYD, 5005 Embla Ave., Baltimore 10, Mr., wants *Trains* bound vol. 1 and 3.

(R) DONALD F. MECKLEY, 311 Mill St., Conneaut, O., will sell *Railroad Magazine* Sept. '34 to June '41, exc. Oct. '34, Jan. 41, good cond., $10 plus post.

FRANK Y. MERRIMAN, 1004 No. Kedvale Ave., Chicago 51, Ill., will sell or trade C&NW emp. tts., Galena Div.; single track tr. ords. Wants *Air Brake Rules & Instruction* books, any rd.

(*) WARREN E. MILLER, 306 Jerome Ave., Piedmont, 10, Calif., will sell size 616 negs. SF Muny, Calif. Cable RR., Key system, others, 25c ea., or trade for other western elecs; few SP, WP. AT&SF negs., mostly small power. Wants negs. SDERY, U-ICRR, BERR. Phoenix Muny, Anaconda St. Ry.

(R) ROBT. E. MULFORD, 781 Fenelon Pl., Dubuque, Ia., will sell *Railroad Magazine,* Jan. '38-Apr. '43.

(R) RENALDO PAYARES, Fernando De Zayas 404, Camaguey, Cuba, will trade stamps, used, for *Railroad Mag., Trains, Model Railroader,* Jan., Sept., Aug. '46.

JOHN PICKETT R. D. 2, Canajoharie, N. Y., wants to trade pix with fans B&M, NYO&W, D&H, FJ&G; to buy good size 116, 124 negs. B&M, esp. 2-8-4, 2-10-2, Hoosac Tunnel elecs.; NYO&W, BAR, D&SL, MEC. mig.

PETE RASMUSSEN, Sutphin Ave., Matawan, N. J., wants any size locos, trs., track, layout, pix of Valley R. R., Va. Cent. HT&W, Sar. & Schuylerville, New Haven & Dunbar, Putnam Lbr., Manatee Crate, Brooks-Scanlon No. 7, 32, Pefvy-Moore 103, 101, E. W. Brown No. 1.

(R) ROBT. J. REICH, 161 Thornton St., Hamden 14, Conn., will sell or trade pix Union Fr., East Br. Lincoln, Thunder Lumber, Ontonagon Fibre Corp., Edaville, Del. & Nor., Staten Is. Rap. Tr., Dansville & Mt. Morris, Ill., Ter., P S&N, SR&RL, B&SR, others; short line tts., emp. tts. Wants info. Wis. lumber rrs. Has *Railroad Magazine,* other mags. for sale.

C. JOSEPH RICHARDS, 541 Dalton St., Victoria, B. C., Canada, has eng., pix, p. c. size. 10c for list, sample, tt. Esquimalt & Nanaimo Ry.

(R) HARR RIDGWAY, 624 Hazel Ave., Perth Amboy, N. J., will sell for best cash offer *Railroad Magazine* June '32; Sept. '33; May., Sept., Nov. '34; Mar.-Dec. '35; Jan., Feb., May, July-Dec. '36; '37 to date.

E. L. RITZMAN, Millerstown, Perry County, Pa., has old steam trac. engs., threshers.

(*) JOHN C. ROBERTS, 1069 Miller Ave., Columbus, 6, O., has size 116 pix to sell or trade, 20 in lot; 11 Stark Elec., 6 O.P.S., 2 Ohio Midland, 1 surprise Interurban for $1.50. Will trade for 20 interurban pix Texas, Okla., Iowa, Utah, or Ill. Terminal RR.

CLYDE A. SAILORS, Jr., 112 West Moneta St., Bakersfield, Calif., will sell, trade *Model Airplane News; Air Trails,* other Aircraft bboks '31 to '46 Wants Vol. 1, 2, 3 *Model Railroader,* any *Railroad* Magazine books.

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(*) DICK SHROVE 1517 Banks Pl., Lakeland, Fla., will trade pix Tampa Elec. Co. street cars, one week before abdn. for items for collec. Military Insignia.

HENRY M. TISCHLER, 310 W. 106 St., New York 25, N. Y. offers size 616 prints U.S. roads, 5c ea.

(R) A. WM. VIDEN, Jr., 12 Viden R., Quincy 69, Mass., *B&M fireman*, wants *Railroad Magazine* Feb. '37, Mar. '36; state price. Trades B&M ords. for others.

(*) BILL VIGRASS, 1494 Cohassett Ave., Lakewood 7, O., will sell, trade size 116 pix elec. rys.; has Cleve. Transit, Youngstown & Sou., Shaker Hts. R. T. Ohio Pub. Serv., Akron Transp., Cleve. Union Term., L&PS, Toledo, TTC, JW&NW, Pitts. Rys., Canada, others. List 500 pix, sample 10c. Wants Penn Lines, Altoona, etc.

F. C. WALKER, Hitchcock, Texas, has Eastman Kodak 2C, amastigmat lens F 77; will trade for *Trains*, vol. 1 and 2, bound, loose.

LEONA WALKER, Hitchcock, Texas, will trade 42 issues *Model Railroader* '39 to date; 10 *Model Craftsman*; 6 *Model Builder*, 15 *Trains*, etc. Wants *Trains* before '43. Exchange lists.

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(*) HENRY K. WISMER 50 Reliance Rd., Souderton, Pa., collects trolley pix, diff. lines.

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T. J. PELLETIER, Box 39, Rt. 3, Palouse, Wash., wants 24 AF 9½ in. long boxcars, 6 Lionel 813 8-inch cattle cars, 5 Lionel 814 8-in. boxcars, all hand couplers.

BOB PETERSON, 91 N. Delaplaine Rd., Riverside, Ill., will sell new unused, S gage 3/16 in. scale U. S. R. A. Nord Mikado loco chassis, mechanism kit, sec. 1, 2, $21.37 list price; has sprung drives, screwdriver assembly; boiler may be purchased from mfg. or built by you; in orig. box for $15.

FLOYD SIGMONT, 3531 West St., Hollidays Cove, W. Va., will sell, cash only, O gage Lionel Scale, excell. cond., 1 No. 717 caboose $8; 1 No. 716 Hopper car, $6.50; 1 No. 715 tank car, $6.50; 1 No. 714 box car, $5.50; 16 sec. No. 761 curv. track, $4.75; 8 sec. DC curv. track, $1.60; 4 sec. OS str. track, 80c.

H. L. WAHL, 2332 Seabright Ave., Long Beach 6, Calif., will sell or trade Japanese rifle, 25 caliber, Japanese swords; Walthers O gage car kits, Marx elec. switches, cars. Wants HO locos. Send for list.

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